CERTIFICATE OF ANALYSIS

SDG:	190821-98	**Client Reference:**		**Report Number:**	521349
Location:	Llanwern	**Order Number:**	LLA650	**Superseded Report:**	520860

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.104	**Natural Moisture Content (%)**	14.9
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	87
Particle Size <4mm	>95%		

Case	
SDG	190821-98
Lab Sample Number(s)	20562485
Sampled Date	19-Aug-2019
Customer Sample Ref.	TPBP109
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Concⁿ in 10:1 eluate (mg/l)		**A_2** 10:1 concⁿ leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
PAH Spec MS - Aqueous (W)							
PAH 16 EPA Total by GCMS	0.00584	<0.000082	0.0584	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	0.012	<0.01	0.12	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	0.011	<0.01	0.11	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	0.046	<0.01	0.46	<0.1	-	-	-
Aromatics >EC16-EC21	0.048	<0.01	0.48	<0.1	-	-	-
Aromatics >EC21-EC35	0.011	<0.01	0.11	<0.1	-	-	-
Total Aromatics >EC12-EC35	0.105	<0.01	1.05	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	0.152	<0.01	1.52	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	30-Aug-2019
pH (pH Units)	7.58
Conductivity (µS/cm)	182.00
Temperature (°C)	22.30
Volume Leachant (Litres)	0.887

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	190821-98	**Client Reference:**		**Report Number:**	521349
Location:	Llanwern	**Order Number:**	LLA650	**Superseded Report:**	520860

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.099	**Natural Moisture Content (%)**	10.3
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	90.7
Particle Size <4mm	>95%		

Case	
SDG	190821-98
Lab Sample Number(s)	20562500
Sampled Date	15-Aug-2019
Customer Sample Ref.	TPBP111
Depth (m)	0.30 - 0.30

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Ammoniacal Nitrogen as N	0.0172	<0.01	0.172	<0.1	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00206	<0.0005	0.0206	<0.005	-	-	-
Free Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Phenol by HPLC (W)	<0.002	<0.002	<0.02	<0.02	-	-	-
Cresols by HPLC (W)	<0.006	<0.006	<0.06	<0.06	-	-	-
Xylenols by HPLC (W)	<0.008	<0.008	<0.08	<0.08	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Total Monohydric Phenols (W)	<0.016	<0.016	<0.16	<0.16	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.00394	<0.0003	0.0394	<0.003	-	-	-
Lead	0.00055	<0.0002	0.0055	<0.002	-	-	-
Manganese	0.00526	<0.003	0.0526	<0.03	-	-	-
Nickel	0.000754	<0.0004	0.00754	<0.004	-	-	-
Selenium	<0.001	<0.001	<0.01	<0.01	-	-	-
Vanadium	0.00242	<0.001	0.0242	<0.01	-	-	-
Zinc	0.00744	<0.001	0.0744	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.742	<0.019	7.42	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Acenaphthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000298	<0.000005	0.000298	<0.00005	-	-	-
Anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Phenanthrene by GCMS	0.00000741	<0.000005	0.0000741	<0.00005	-	-	-
Fluorene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.0000297	<0.000005	0.000297	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.0000127	<0.000005	0.000127	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.00000532	<0.000002	0.0000532	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	0.00000716	<0.000005	0.0000716	<0.00005	-	-	-

Leach Test Information

Date Prepared	30-Aug-2019
pH (pH Units)	8.49
Conductivity (µS/cm)	167.00
Temperature (°C)	22.10
Volume Leachant (Litres)	0.891

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	190821-98	**Client Reference:**		**Report Number:**	521349
Location:	Llanwern	**Order Number:**	LLA650	**Superseded Report:**	520860

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.099	**Natural Moisture Content (%)**	10.3
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	90.7
Particle Size <4mm	>95%		

Case	
SDG	190821-98
Lab Sample Number(s)	20562500
Sampled Date	15-Aug-2019
Customer Sample Ref.	TPBP111
Depth (m)	0.30 - 0.30

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
PAH Spec MS - Aqueous (W)							
PAH 16 EPA Total by GCMS	0.0000921	<0.000082	0.000921	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	30-Aug-2019
pH (pH Units)	8.49
Conductivity (µS/cm)	167.00
Temperature (°C)	22.10
Volume Leachant (Litres)	0.891

Mcerts Certification does not apply to leachates

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Validated

CERTIFICATE OF ANALYSIS

SDG:	190821-98	**Client Reference:**		**Report Number:**	521349
Location:	Llanwern	**Order Number:**	LLA650	**Superseded Report:**	520860

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.100	**Natural Moisture Content (%)**	11.1
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	90
Particle Size <4mm	>95%		

Case	
SDG	190821-98
Lab Sample Number(s)	20562507
Sampled Date	15-Aug-2019
Customer Sample Ref.	TPBP111
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Mercury Dissolved (CVAF)	0.0000115	<0.00001	0.000115	<0.0001	-	-	-
Ammoniacal Nitrogen as N	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00295	<0.0005	0.0295	<0.005	-	-	-
Free Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Phenol by HPLC (W)	<0.002	<0.002	<0.02	<0.02	-	-	-
Cresols by HPLC (W)	0.01	<0.006	0.1	<0.06	-	-	-
Xylenols by HPLC (W)	<0.008	<0.008	<0.08	<0.08	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Total Monohydric Phenols (W)	<0.016	<0.016	<0.16	<0.16	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.00319	<0.0003	0.0319	<0.003	-	-	-
Lead	0.000447	<0.0002	0.00447	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.000517	<0.0004	0.00517	<0.004	-	-	-
Selenium	<0.001	<0.001	<0.01	<0.01	-	-	-
Vanadium	0.00417	<0.001	0.0417	<0.01	-	-	-
Zinc	0.00484	<0.001	0.0484	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.826	<0.019	8.26	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Acenaphthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000932	<0.000005	0.000932	<0.00005	-	-	-
Anthracene by GCMS	0.00000936	<0.000005	0.0000936	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000298	<0.000005	0.000298	<0.00005	-	-	-
Fluorene by GCMS	0.00000756	<0.000005	0.0000756	<0.00005	-	-	-
Chrysene by GCMS	0.0000167	<0.000005	0.000167	<0.00005	-	-	-
Pyrene by GCMS	0.0000751	<0.000005	0.000751	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.000025	<0.000005	0.00025	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.0000258	<0.000005	0.000258	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.00000915	<0.000005	0.0000915	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.0000138	<0.000002	0.000138	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	0.000018	<0.000005	0.00018	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	0.00000961	<0.000005	0.0000961	<0.00005	-	-	-

Leach Test Information

Date Prepared	30-Aug-2019
pH (pH Units)	8.35
Conductivity (µS/cm)	159.00
Temperature (°C)	22.00
Volume Leachant (Litres)	0.890

Mcerts Certification does not apply to leachates
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CERTIFICATE OF ANALYSIS

SDG:	190821-98	**Client Reference:**		**Report Number:**	521349
Location:	Llanwern	**Order Number:**	LLA650	**Superseded Report:**	520860

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.100	**Natural Moisture Content (%)**	11.1
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	90
Particle Size <4mm	>95%		

Case	
SDG	190821-98
Lab Sample Number(s)	20562507
Sampled Date	15-Aug-2019
Customer Sample Ref.	TPBP111
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
PAH Spec MS - Aqueous (W)							
PAH 16 EPA Total by GCMS	0.000333	<0.000082	0.00333	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	30-Aug-2019
pH (pH Units)	8.35
Conductivity (µS/cm)	159.00
Temperature (°C)	22.00
Volume Leachant (Litres)	0.890

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	190821-98	**Client Reference:**		**Report Number:**	521349
Location:	Llanwern	**Order Number:**	LLA650	**Superseded Report:**	520860

Table of Results - Appendix

Method No	Reference	Description
PM024	Modified BS 1377	Soil preparation including homogenisation, moisture screens of soils for Asbestos Containing Material
PM115		Leaching Procedure for CEN One Stage Leach Test 2:1 & 10:1 1 Step
TM024	Method 4500A & B, AWWA/APHA, 20th Ed., 1999	Determination of Exchangeable Ammonium and Ammoniacal Nitrogen as N by titration on solids
TM048	HSG 248, Asbestos: The analysts' guide for sampling, analysis and clearance procedures	Identification of Asbestos in Bulk Material
TM062 (S)	National Grid Property Holdings Methods for the Collection & Analysis of Samples from National Grid Sites version 1 Sec 3.9	Determination of Phenols in Soils by HPLC
TM089	Modified: US EPA Methods 8020 & 602	Determination of Gasoline Range Hydrocarbons (GRO) by Headspace GC-FID (C4-C12)
TM099	BS 2690: Part 7:1968 / BS 6068: Part2.11:1984	Determination of Ammonium in Water Samples using the Kone Analyser
TM116	Modified: US EPA Method 8260, 8120, 8020, 624, 610 & 602	Determination of Volatile Organic Compounds by Headspace / GC-MS
TM132	In - house Method	ELTRA CS800 Operators Guide
TM133	BS 1377: Part 3 1990;BS 6068-2.5	Determination of pH in Soil and Water using the GLpH pH Meter
TM152	Method 3125B, AWWA/APHA, 20th Ed., 1999	Analysis of Aqueous Samples by ICP-MS
TM153	Method 4500A,B,C, I, M AWWA/APHA, 20th Ed., 1999	Determination of Total Cyanide, Free (Easily Liberatable) Cyanide and Thiocyanate using the Skalar SANS+ System Segmented Flow Analyser
TM173	Analysis of Petroleum Hydrocarbons in Environmental Media – Total Petroleum Hydrocarbon Criteria	Determination of Speciated Extractable Petroleum Hydrocarbons in Soils by GC-FID
TM174	Analysis of Petroleum Hydrocarbons in Environmental Media – Total Petroleum Hydrocarbon Criteria	Determination of Speciated Extractable Petroleum Hydrocarbons in Waters by GC-FID
TM178	Modified: US EPA Method 8100	Determination of Polynuclear Aromatic Hydrocarbons (PAH) by GC-MS in Waters
TM181	US EPA Method 6010B	Determination of Routine Metals in Soil by iCap 6500 Duo ICP-OES
TM183	BS EN 23506:2002, (BS 6068-2.74:2002) ISBN 0 580 38924 3	Determination of Trace Level Mercury in Waters and Leachates by PSA Cold Vapour Atomic Fluorescence Spectrometry
TM218	Shaker extraction - EPA method 3546.	The determination of PAH in soil samples by GC-MS
TM221	Inductively Coupled Plasma - Atomic Emission Spectroscopy. An Atlas of Spectral Information: Winge, Fassel, Peterson and Floyd	Determination of Acid extractable Sulphate in Soils by IRIS Emission Spectrometer
TM227	Standard methods for the examination of waters and wastewaters 20th Edition, AWWA/APHA Method 4500.	Determination of Total Cyanide, Free (Easily Liberatable) Cyanide and Thiocyanate
TM243		Mixed Anions In Soils By Kone
TM245	By GC-FID	Determination of GRO by Headspace in waters
TM256	The measurement of Electrical Conductivity and the Laboratory determination of pH Value of Natural, Treated and Wastewaters. HMSO, 1978. ISBN 011 751428 4.	Determination of pH in Water and Leachate using the GLpH pH Meter
TM259	by HPLC	Determination of Phenols in Waters and Leachates by HPLC
TM304	HSE Contract research Report no 83/1996	Asbestos Quantification in Soil: Fibres identified by morphology only

NA = not applicable.

Chemical testing (unless subcontracted) performed at ALS Life Sciences Ltd Hawarden (Method codes TM) or ALS Life Sciences Ltd Aberdeen (Method codes S).

CERTIFICATE OF ANALYSIS

SDG:	190821-98	**Client Reference:**		**Report Number:**	521349
Location:	Llanwern	**Order Number:**	LLA650	**Superseded Report:**	520860

Test Completion Dates

Lab Sample No(s)	20562126	20562134	20562154	20562164	20562171	20562103	20562111	20562119	20562084	20562092
Customer Sample Ref.	CPB1	CPB1	CPB1	CPB1	CPB9	CPBR1	CPBR1	CPBR1	CPBR6	CPBR6
AGS Ref.										
Depth	3.30 - 3.30	4.00 - 4.00	5.20 - 5.20	8.10 - 8.10	3.50 - 3.50	3.10 - 3.10	5.80 - 5.80	9.50 - 9.50	3.60 - 3.60	5.60 - 5.60
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
Ammonium Low	08-Sep-2019	02-Sep-2019	08-Sep-2019	08-Sep-2019	06-Sep-2019	06-Sep-2019	08-Sep-2019	08-Sep-2019	06-Sep-2019	08-Sep-2019
Ammonium Soil by Titration	29-Aug-2019	29-Aug-2019	29-Aug-2019	29-Aug-2019	30-Aug-2019	09-Sep-2019	09-Sep-2019	04-Sep-2019	29-Aug-2019	30-Aug-2019
Anions by Kone (soil)	07-Sep-2019	05-Sep-2019	07-Sep-2019	09-Sep-2019	05-Sep-2019	09-Sep-2019	29-Aug-2019	05-Sep-2019	03-Sep-2019	05-Sep-2019
Asbestos ID in Solid Samples	28-Aug-2019	28-Aug-2019	27-Aug-2019	28-Aug-2019	28-Aug-2019	04-Sep-2019	30-Aug-2019	28-Aug-2019	28-Aug-2019	28-Aug-2019
CEN 10:1 Leachate (1 Stage)	28-Aug-2019	04-Sep-2019	28-Aug-2019	30-Aug-2019	29-Aug-2019	04-Sep-2019	04-Sep-2019	30-Aug-2019	30-Aug-2019	30-Aug-2019
CEN Readings	30-Aug-2019	06-Sep-2019	30-Aug-2019	03-Sep-2019	03-Sep-2019	08-Sep-2019	06-Sep-2019	03-Sep-2019	03-Sep-2019	03-Sep-2019
Cyanide Comp/Free/Total/Thiocyanate	30-Aug-2019	30-Aug-2019	30-Aug-2019	05-Sep-2019	04-Sep-2019	09-Sep-2019	04-Sep-2019	04-Sep-2019	04-Sep-2019	05-Sep-2019
Dissolved Metals by ICP-MS	05-Sep-2019	05-Sep-2019	05-Sep-2019	10-Sep-2019	09-Sep-2019	10-Sep-2019	11-Sep-2019	11-Sep-2019	09-Sep-2019	10-Sep-2019
EPH CWG (Aliphatic) Aqueous GC (W)	04-Sep-2019	04-Sep-2019	04-Sep-2019	09-Sep-2019	04-Sep-2019	09-Sep-2019	09-Sep-2019	09-Sep-2019	09-Sep-2019	09-Sep-2019
EPH CWG (Aliphatic) GC (S)	30-Aug-2019	30-Aug-2019	28-Aug-2019	30-Aug-2019	28-Aug-2019	04-Sep-2019	04-Sep-2019	29-Aug-2019	29-Aug-2019	28-Aug-2019
EPH CWG (Aromatic) Aqueous GC (W)	04-Sep-2019	04-Sep-2019	04-Sep-2019	09-Sep-2019	04-Sep-2019	09-Sep-2019	09-Sep-2019	09-Sep-2019	09-Sep-2019	09-Sep-2019
EPH CWG (Aromatic) GC (S)	30-Aug-2019	30-Aug-2019	28-Aug-2019	30-Aug-2019	28-Aug-2019	04-Sep-2019	04-Sep-2019	29-Aug-2019	29-Aug-2019	28-Aug-2019
GRO by GC-FID (S)	09-Sep-2019	09-Sep-2019	09-Sep-2019	03-Sep-2019	09-Sep-2019	03-Sep-2019	03-Sep-2019	03-Sep-2019	04-Sep-2019	03-Sep-2019
GRO by GC-FID (W)	03-Sep-2019	03-Sep-2019	03-Sep-2019	04-Sep-2019	03-Sep-2019	09-Sep-2019		03-Sep-2019	03-Sep-2019	04-Sep-2019
Mercury Dissolved	04-Sep-2019	04-Sep-2019	04-Sep-2019	09-Sep-2019	06-Sep-2019	09-Sep-2019	06-Sep-2019	06-Sep-2019	06-Sep-2019	06-Sep-2019
Metals in solid samples by OES	04-Sep-2019	06-Sep-2019	03-Sep-2019	03-Sep-2019	03-Sep-2019	09-Sep-2019	03-Sep-2019	04-Sep-2019	03-Sep-2019	06-Sep-2019
PAH by GCMS	05-Sep-2019	05-Sep-2019	06-Sep-2019	05-Sep-2019	29-Aug-2019	02-Sep-2019	30-Aug-2019	28-Aug-2019	05-Sep-2019	28-Aug-2019
PAH Spec MS - Aqueous (W)	04-Sep-2019	04-Sep-2019	04-Sep-2019	09-Sep-2019	04-Sep-2019	09-Sep-2019	09-Sep-2019	09-Sep-2019	09-Sep-2019	09-Sep-2019
pH	28-Aug-2019	28-Aug-2019	29-Aug-2019	29-Aug-2019	28-Aug-2019	06-Sep-2019	03-Sep-2019	03-Sep-2019	28-Aug-2019	29-Aug-2019
pH Value	03-Sep-2019	03-Sep-2019	03-Sep-2019	05-Sep-2019	09-Sep-2019	09-Sep-2019	09-Sep-2019	06-Sep-2019	06-Sep-2019	05-Sep-2019
Phenols by HPLC (S)	31-Aug-2019	31-Aug-2019	31-Aug-2019	31-Aug-2019	30-Aug-2019	04-Sep-2019	04-Sep-2019	04-Sep-2019	31-Aug-2019	31-Aug-2019
Phenols by HPLC (W)	04-Sep-2019	07-Sep-2019	05-Sep-2019	09-Sep-2019	03-Sep-2019	07-Sep-2019	07-Sep-2019	07-Sep-2019	04-Sep-2019	09-Sep-2019
Sample description	24-Aug-2019	24-Aug-2019	24-Aug-2019	24-Aug-2019	24-Aug-2019	27-Aug-2019	27-Aug-2019	24-Aug-2019	24-Aug-2019	24-Aug-2019
Total Organic Carbon	03-Sep-2019	06-Sep-2019	04-Sep-2019	09-Sep-2019	03-Sep-2019	09-Sep-2019	30-Aug-2019	06-Sep-2019	06-Sep-2019	06-Sep-2019
Total Sulphate	04-Sep-2019	05-Sep-2019	04-Sep-2019	04-Sep-2019	06-Sep-2019	09-Sep-2019	30-Aug-2019	05-Sep-2019	06-Sep-2019	05-Sep-2019
Total Sulphur	02-Sep-2019	05-Sep-2019	02-Sep-2019	05-Sep-2019	02-Sep-2019	09-Sep-2019	02-Sep-2019	04-Sep-2019	04-Sep-2019	04-Sep-2019
TPH CWG (W)	04-Sep-2019	04-Sep-2019	04-Sep-2019	09-Sep-2019	04-Sep-2019	09-Sep-2019	10-Sep-2019	09-Sep-2019	09-Sep-2019	09-Sep-2019
TPH CWG GC (S)	09-Sep-2019	09-Sep-2019	09-Sep-2019	03-Sep-2019	09-Sep-2019	04-Sep-2019	04-Sep-2019	03-Sep-2019	04-Sep-2019	03-Sep-2019
VOC MS (S)	04-Sep-2019	04-Sep-2019	04-Sep-2019	30-Aug-2019	04-Sep-2019	03-Sep-2019	03-Sep-2019	03-Sep-2019	03-Sep-2019	03-Sep-2019

Lab Sample No(s)	20561965	20562062	20562055	20562069	20562077	20562286	20562294	20562301	20562348	20562356
Customer Sample Ref.	TPBP102	TPBP102	TPBP104	TPBP104	TPBP104	TPBP105	TPBP105	TPBP105	TPBP108	TPBP108
AGS Ref.										
Depth	0.50 - 0.50	1.50 - 1.50	0.30 - 0.30	0.50 - 0.50	1.50 - 1.50	0.30 - 0.30	1.00 - 1.00	1.50 - 1.50	0.30 - 0.30	1.00 - 1.00
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
Ammonium Low	08-Sep-2019		08-Sep-2019	08-Sep-2019		08-Sep-2019	09-Sep-2019		08-Sep-2019	08-Sep-2019
Ammonium Soil by Titration	04-Sep-2019	30-Aug-2019	04-Sep-2019	29-Aug-2019	03-Sep-2019	04-Sep-2019	04-Sep-2019	09-Sep-2019	09-Sep-2019	03-Sep-2019
Anions by Kone (soil)	02-Sep-2019	05-Sep-2019	05-Sep-2019	07-Sep-2019	30-Aug-2019	07-Sep-2019	02-Sep-2019	09-Sep-2019	07-Sep-2019	03-Sep-2019
Asbestos ID in Solid Samples	27-Aug-2019	28-Aug-2019	28-Aug-2019	28-Aug-2019	28-Aug-2019	28-Aug-2019	29-Aug-2019	29-Aug-2019	30-Aug-2019	30-Aug-2019
CEN 10:1 Leachate (1 Stage)	30-Aug-2019		30-Aug-2019	29-Aug-2019		30-Aug-2019	30-Aug-2019		04-Sep-2019	30-Aug-2019
CEN Readings	03-Sep-2019		03-Sep-2019	03-Sep-2019		03-Sep-2019	03-Sep-2019		08-Sep-2019	03-Sep-2019
Cyanide Comp/Free/Total/Thiocyanate	03-Sep-2019	28-Aug-2019	04-Sep-2019	03-Sep-2019	03-Sep-2019	04-Sep-2019	04-Sep-2019	02-Sep-2019	09-Sep-2019	04-Sep-2019
Dissolved Metals by ICP-MS	04-Sep-2019		09-Sep-2019	04-Sep-2019		11-Sep-2019	09-Sep-2019		09-Sep-2019	11-Sep-2019
EPH CWG (Aliphatic) Aqueous GC (W)	04-Sep-2019		09-Sep-2019	04-Sep-2019		09-Sep-2019	09-Sep-2019		09-Sep-2019	09-Sep-2019
EPH CWG (Aliphatic) GC (S)	04-Sep-2019	29-Aug-2019	29-Aug-2019	30-Aug-2019	04-Sep-2019	04-Sep-2019	04-Sep-2019	04-Sep-2019	04-Sep-2019	04-Sep-2019
EPH CWG (Aromatic) Aqueous GC (W)	04-Sep-2019		09-Sep-2019	04-Sep-2019		09-Sep-2019	09-Sep-2019		09-Sep-2019	09-Sep-2019
EPH CWG (Aromatic) GC (S)	04-Sep-2019	29-Aug-2019	29-Aug-2019	30-Aug-2019	04-Sep-2019	04-Sep-2019	04-Sep-2019	04-Sep-2019	04-Sep-2019	04-Sep-2019
GRO by GC-FID (S)	06-Sep-2019	09-Sep-2019	03-Sep-2019	03-Sep-2019	03-Sep-2019	06-Sep-2019	06-Sep-2019	06-Sep-2019	09-Sep-2019	09-Sep-2019
GRO by GC-FID (W)	03-Sep-2019		03-Sep-2019	03-Sep-2019		03-Sep-2019	03-Sep-2019		09-Sep-2019	03-Sep-2019
Mercury Dissolved	04-Sep-2019		06-Sep-2019	04-Sep-2019		06-Sep-2019	06-Sep-2019		09-Sep-2019	06-Sep-2019
Metals in solid samples by OES	04-Sep-2019	09-Sep-2019	06-Sep-2019	04-Sep-2019	03-Sep-2019	09-Sep-2019	04-Sep-2019	04-Sep-2019	04-Sep-2019	04-Sep-2019
PAH by GCMS	30-Aug-2019	29-Aug-2019	29-Aug-2019	05-Sep-2019	29-Aug-2019	03-Sep-2019	03-Sep-2019	03-Sep-2019	30-Aug-2019	30-Aug-2019
PAH Spec MS - Aqueous (W)	04-Sep-2019		09-Sep-2019	04-Sep-2019		09-Sep-2019	09-Sep-2019		09-Sep-2019	09-Sep-2019
pH	09-Sep-2019	29-Aug-2019	03-Sep-2019	29-Aug-2019	03-Sep-2019	09-Sep-2019	03-Sep-2019	09-Sep-2019	09-Sep-2019	09-Sep-2019
pH Value	04-Sep-2019		09-Sep-2019	04-Sep-2019		06-Sep-2019	09-Sep-2019		09-Sep-2019	06-Sep-2019
Phenols by HPLC (S)	10-Sep-2019	28-Aug-2019	04-Sep-2019	31-Aug-2019	04-Sep-2019	10-Sep-2019	04-Sep-2019	05-Sep-2019	03-Sep-2019	03-Sep-2019
Phenols by HPLC (W)	03-Sep-2019		07-Sep-2019	03-Sep-2019		05-Sep-2019	07-Sep-2019		07-Sep-2019	04-Sep-2019
Sample description	28-Aug-2019	24-Aug-2019	27-Aug-2019	24-Aug-2019	27-Aug-2019	28-Aug-2019	28-Aug-2019	28-Aug-2019	28-Aug-2019	28-Aug-2019
Total Organic Carbon	03-Sep-2019	04-Sep-2019	06-Sep-2019	09-Sep-2019	31-Aug-2019	06-Sep-2019	04-Sep-2019	06-Sep-2019	04-Sep-2019	04-Sep-2019
Total Sulphate	04-Sep-2019	04-Sep-2019	05-Sep-2019	06-Sep-2019	30-Aug-2019	05-Sep-2019	04-Sep-2019	05-Sep-2019	04-Sep-2019	04-Sep-2019
Total Sulphur	02-Sep-2019	02-Sep-2019	04-Sep-2019	02-Sep-2019	30-Aug-2019	04-Sep-2019	02-Sep-2019	03-Sep-2019	02-Sep-2019	02-Sep-2019
TPH CWG (W)	04-Sep-2019		09-Sep-2019	04-Sep-2019		09-Sep-2019	09-Sep-2019		09-Sep-2019	09-Sep-2019
TPH CWG GC (S)	06-Sep-2019	09-Sep-2019	03-Sep-2019	03-Sep-2019	04-Sep-2019	06-Sep-2019	06-Sep-2019	06-Sep-2019	09-Sep-2019	09-Sep-2019
VOC MS (S)	05-Sep-2019	05-Sep-2019	03-Sep-2019	03-Sep-2019	03-Sep-2019	05-Sep-2019	05-Sep-2019	05-Sep-2019	05-Sep-2019	05-Sep-2019

Validated

CERTIFICATE OF ANALYSIS

SDG:	190821-98	**Client Reference:**		**Report Number:**	521349
Location:	Llanwern	**Order Number:**	LLA650	**Superseded Report:**	520860

Lab Sample No(s)	20562363	20562478	20562485	20562493	20562500	20562507	20562515	20562005	20562013	20562020
Customer Sample Ref.	TPBP108	TPBP109	TPBP109	TPBP109	TPBP111	TPBP111	TPBP111	TPBP112	TPBP112	TPBP112
AGS Ref.										
Depth	1.50 - 1.50	0.30 - 0.30	0.50 - 0.50	1.50 - 1.50	0.30 - 0.30	0.50 - 0.50	1.50 - 1.50	0.20 - 0.20	0.50 - 0.50	1.00 - 1.00
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
Ammonium Low		09-Sep-2019	08-Sep-2019		08-Sep-2019	08-Sep-2019		08-Sep-2019	08-Sep-2019	08-Sep-2019
Ammonium Soil by Titration	04-Sep-2019	03-Sep-2019	03-Sep-2019	04-Sep-2019	04-Sep-2019	03-Sep-2019	03-Sep-2019	03-Sep-2019	04-Sep-2019	29-Aug-2019
Anions by Kone (soil)	03-Sep-2019	02-Sep-2019	03-Sep-2019	03-Sep-2019	02-Sep-2019	04-Sep-2019	29-Aug-2019	30-Aug-2019	30-Aug-2019	03-Sep-2019
Asbestos ID in Solid Samples	03-Sep-2019	29-Aug-2019	29-Aug-2019	30-Aug-2019	28-Aug-2019	28-Aug-2019	28-Aug-2019	28-Aug-2019	28-Aug-2019	27-Aug-2019
CEN 10:1 Leachate (1 Stage)		04-Sep-2019	30-Aug-2019		30-Aug-2019	30-Aug-2019		30-Aug-2019	30-Aug-2019	30-Aug-2019
CEN Readings		08-Sep-2019	03-Sep-2019		03-Sep-2019	03-Sep-2019		03-Sep-2019	03-Sep-2019	03-Sep-2019
Cyanide Comp/Free/Total/Thiocyanate	02-Sep-2019	09-Sep-2019	04-Sep-2019	02-Sep-2019	04-Sep-2019	05-Sep-2019	03-Sep-2019	03-Sep-2019	03-Sep-2019	03-Sep-2019
Dissolved Metals by ICP-MS		10-Sep-2019	11-Sep-2019		11-Sep-2019	10-Sep-2019		04-Sep-2019	04-Sep-2019	04-Sep-2019
EPH CWG (Aliphatic) Aqueous GC (W)		09-Sep-2019	09-Sep-2019		09-Sep-2019	09-Sep-2019		04-Sep-2019	04-Sep-2019	04-Sep-2019
EPH CWG (Aliphatic) GC (S)	04-Sep-2019	04-Sep-2019	04-Sep-2019	04-Sep-2019	04-Sep-2019	04-Sep-2019	04-Sep-2019	04-Sep-2019	04-Sep-2019	29-Aug-2019
EPH CWG (Aromatic) Aqueous GC (W)		09-Sep-2019	09-Sep-2019		09-Sep-2019	09-Sep-2019		04-Sep-2019	04-Sep-2019	04-Sep-2019
EPH CWG (Aromatic) GC (S)	04-Sep-2019	04-Sep-2019	04-Sep-2019	04-Sep-2019	04-Sep-2019	04-Sep-2019	04-Sep-2019	04-Sep-2019	04-Sep-2019	29-Aug-2019
GRO by GC-FID (S)	09-Sep-2019	09-Sep-2019	09-Sep-2019	09-Sep-2019	03-Sep-2019	03-Sep-2019	03-Sep-2019	03-Sep-2019	03-Sep-2019	03-Sep-2019
GRO by GC-FID (W)		09-Sep-2019	03-Sep-2019		03-Sep-2019	04-Sep-2019		03-Sep-2019	03-Sep-2019	03-Sep-2019
Mercury Dissolved		09-Sep-2019	06-Sep-2019		06-Sep-2019	09-Sep-2019		04-Sep-2019	04-Sep-2019	04-Sep-2019
Metals in solid samples by OES	03-Sep-2019	03-Sep-2019	03-Sep-2019	03-Sep-2019	04-Sep-2019	03-Sep-2019	03-Sep-2019	04-Sep-2019	02-Sep-2019	03-Sep-2019
PAH by GCMS	02-Sep-2019	10-Sep-2019	06-Sep-2019	10-Sep-2019	30-Aug-2019	30-Aug-2019	30-Aug-2019	29-Aug-2019	29-Aug-2019	29-Aug-2019
PAH Spec MS - Aqueous (W)		09-Sep-2019	09-Sep-2019		09-Sep-2019	09-Sep-2019		04-Sep-2019	04-Sep-2019	04-Sep-2019
pH	06-Sep-2019	03-Sep-2019	03-Sep-2019	09-Sep-2019	06-Sep-2019	06-Sep-2019	03-Sep-2019	03-Sep-2019	03-Sep-2019	29-Aug-2019
pH Value		09-Sep-2019	06-Sep-2019		06-Sep-2019	05-Sep-2019		04-Sep-2019	04-Sep-2019	04-Sep-2019
Phenols by HPLC (S)	07-Sep-2019	04-Sep-2019	04-Sep-2019	04-Sep-2019	05-Sep-2019	04-Sep-2019	04-Sep-2019	04-Sep-2019	04-Sep-2019	31-Aug-2019
Phenols by HPLC (W)		07-Sep-2019	07-Sep-2019		07-Sep-2019	05-Sep-2019		03-Sep-2019	03-Sep-2019	03-Sep-2019
Sample description	28-Aug-2019	28-Aug-2019	28-Aug-2019	28-Aug-2019	28-Aug-2019	28-Aug-2019	27-Aug-2019	27-Aug-2019	27-Aug-2019	24-Aug-2019
Total Organic Carbon	03-Sep-2019	09-Sep-2019	03-Sep-2019	03-Sep-2019	03-Sep-2019	03-Sep-2019	30-Aug-2019	31-Aug-2019	31-Aug-2019	06-Sep-2019
Total Sulphate	04-Sep-2019	04-Sep-2019	04-Sep-2019	06-Sep-2019	04-Sep-2019	04-Sep-2019	30-Aug-2019	30-Aug-2019	30-Aug-2019	09-Sep-2019
Total Sulphur	02-Sep-2019	02-Sep-2019	02-Sep-2019	02-Sep-2019	02-Sep-2019	02-Sep-2019	30-Aug-2019	30-Aug-2019	30-Aug-2019	04-Sep-2019
TPH CWG (W)		09-Sep-2019	09-Sep-2019		09-Sep-2019	09-Sep-2019		04-Sep-2019	04-Sep-2019	04-Sep-2019
TPH CWG GC (S)	09-Sep-2019	09-Sep-2019	09-Sep-2019	09-Sep-2019	04-Sep-2019	04-Sep-2019	04-Sep-2019	04-Sep-2019	04-Sep-2019	03-Sep-2019
VOC MS (S)	05-Sep-2019	05-Sep-2019	05-Sep-2019	05-Sep-2019	03-Sep-2019	03-Sep-2019	03-Sep-2019	30-Aug-2019	30-Aug-2019	30-Aug-2019

Lab Sample No(s)	20562027	20562035	20562043	20562397	20562406	20562414	20562429	20562448	20562455	20562230
Customer Sample Ref.	TPBP113	TPBP113	TPBP113	TPBP117	TPBP117	TPBP117	TPBP118	TPBP118	TPBP118	TPBP128
AGS Ref.										
Depth	0.20 - 0.20	0.50 - 0.50	1.50 - 1.50	0.30 - 0.30	1.00 - 1.00	1.50 - 1.50	0.30 - 0.30	1.00 - 1.00	1.50 - 1.50	0.30 - 0.30
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
Ammonium Low	08-Sep-2019	08-Sep-2019		08-Sep-2019	08-Sep-2019		09-Sep-2019	08-Sep-2019		08-Sep-2019
Ammonium Soil by Titration	03-Sep-2019	03-Sep-2019	03-Sep-2019	04-Sep-2019	09-Sep-2019	04-Sep-2019	03-Sep-2019	04-Sep-2019	09-Sep-2019	29-Aug-2019
Anions by Kone (soil)	30-Aug-2019	05-Sep-2019	30-Aug-2019	03-Sep-2019	30-Aug-2019	03-Sep-2019	03-Sep-2019	03-Sep-2019	03-Sep-2019	03-Sep-2019
Asbestos ID in Solid Samples	29-Aug-2019	30-Aug-2019	28-Aug-2019	28-Aug-2019	28-Aug-2019	30-Aug-2019	30-Aug-2019	29-Aug-2019	30-Aug-2019	27-Aug-2019
Asbestos Quantification - Full		05-Sep-2019		29-Aug-2019						
CEN 10:1 Leachate (1 Stage)	29-Aug-2019	30-Aug-2019		04-Sep-2019	30-Aug-2019		04-Sep-2019	04-Sep-2019		30-Aug-2019
CEN Readings	03-Sep-2019	03-Sep-2019		08-Sep-2019	03-Sep-2019		08-Sep-2019	06-Sep-2019		03-Sep-2019
Cyanide Comp/Free/Total/Thiocyanate	03-Sep-2019	05-Sep-2019	02-Sep-2019	09-Sep-2019	04-Sep-2019	03-Sep-2019	09-Sep-2019	09-Sep-2019	02-Sep-2019	04-Sep-2019
Dissolved Metals by ICP-MS	05-Sep-2019	10-Sep-2019		09-Sep-2019	11-Sep-2019		13-Sep-2019	10-Sep-2019		11-Sep-2019
EPH CWG (Aliphatic) Aqueous GC (W)	04-Sep-2019	09-Sep-2019		09-Sep-2019	09-Sep-2019		10-Sep-2019	09-Sep-2019		09-Sep-2019
EPH CWG (Aliphatic) GC (S)	04-Sep-2019	04-Sep-2019	04-Sep-2019	04-Sep-2019	04-Sep-2019	04-Sep-2019	04-Sep-2019	04-Sep-2019	03-Sep-2019	30-Aug-2019
EPH CWG (Aromatic) Aqueous GC (W)	04-Sep-2019	09-Sep-2019		09-Sep-2019	09-Sep-2019		10-Sep-2019	09-Sep-2019		09-Sep-2019
EPH CWG (Aromatic) GC (S)	04-Sep-2019	04-Sep-2019	04-Sep-2019	04-Sep-2019	04-Sep-2019	04-Sep-2019	04-Sep-2019	04-Sep-2019	03-Sep-2019	30-Aug-2019
GRO by GC-FID (S)	03-Sep-2019	03-Sep-2019	04-Sep-2019	09-Sep-2019	09-Sep-2019	09-Sep-2019	09-Sep-2019	09-Sep-2019	09-Sep-2019	03-Sep-2019
GRO by GC-FID (W)	03-Sep-2019	04-Sep-2019		09-Sep-2019	03-Sep-2019		09-Sep-2019	09-Sep-2019		03-Sep-2019
Mercury Dissolved	09-Sep-2019	09-Sep-2019		10-Sep-2019	06-Sep-2019		09-Sep-2019	09-Sep-2019		06-Sep-2019
Metals in solid samples by OES	02-Sep-2019	06-Sep-2019	02-Sep-2019	03-Sep-2019	02-Sep-2019	03-Sep-2019	03-Sep-2019	03-Sep-2019	03-Sep-2019	03-Sep-2019
PAH by GCMS	29-Aug-2019	29-Aug-2019	29-Aug-2019	02-Sep-2019	29-Aug-2019	30-Aug-2019	02-Sep-2019	06-Sep-2019	02-Sep-2019	05-Sep-2019
PAH Spec MS - Aqueous (W)	04-Sep-2019	09-Sep-2019		09-Sep-2019	09-Sep-2019		10-Sep-2019	09-Sep-2019		09-Sep-2019
pH	03-Sep-2019	09-Sep-2019	09-Sep-2019	09-Sep-2019	03-Sep-2019	03-Sep-2019	03-Sep-2019	09-Sep-2019	09-Sep-2019	29-Aug-2019
pH Value	03-Sep-2019	05-Sep-2019		09-Sep-2019	06-Sep-2019		09-Sep-2019	09-Sep-2019		09-Sep-2019
Phenols by HPLC (S)	04-Sep-2019	10-Sep-2019	03-Sep-2019	10-Sep-2019	04-Sep-2019	05-Sep-2019	04-Sep-2019	04-Sep-2019	02-Sep-2019	28-Aug-2019
Phenols by HPLC (W)	03-Sep-2019	09-Sep-2019		07-Sep-2019	07-Sep-2019		07-Sep-2019	07-Sep-2019		07-Sep-2019
Sample description	27-Aug-2019	27-Aug-2019	27-Aug-2019	28-Aug-2019	27-Aug-2019	28-Aug-2019	28-Aug-2019	28-Aug-2019	28-Aug-2019	24-Aug-2019
Total Organic Carbon	31-Aug-2019	06-Sep-2019	30-Aug-2019	06-Sep-2019	31-Aug-2019	03-Sep-2019	03-Sep-2019	03-Sep-2019	04-Sep-2019	09-Sep-2019
Total Sulphate	30-Aug-2019	05-Sep-2019	30-Aug-2019	04-Sep-2019	30-Aug-2019	04-Sep-2019	06-Sep-2019	04-Sep-2019	06-Sep-2019	06-Sep-2019
Total Sulphur	30-Aug-2019	04-Sep-2019	02-Sep-2019	02-Sep-2019	30-Aug-2019	02-Sep-2019	02-Sep-2019	02-Sep-2019	02-Sep-2019	02-Sep-2019
TPH CWG (W)	04-Sep-2019	09-Sep-2019		09-Sep-2019	09-Sep-2019		10-Sep-2019	09-Sep-2019		09-Sep-2019
TPH CWG GC (S)	04-Sep-2019	04-Sep-2019	04-Sep-2019	09-Sep-2019	09-Sep-2019	09-Sep-2019	09-Sep-2019	09-Sep-2019	09-Sep-2019	03-Sep-2019
VOC MS (S)	30-Aug-2019	30-Aug-2019	03-Sep-2019	04-Sep-2019	04-Sep-2019	04-Sep-2019	05-Sep-2019	05-Sep-2019	04-Sep-2019	03-Sep-2019

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CERTIFICATE OF ANALYSIS

SDG:	190821-98	**Client Reference:**		**Report Number:**	521349
Location:	Llanwern	**Order Number:**	LLA650	**Superseded Report:**	520860

Lab Sample No(s)	20562247	20562255	20562263	20562141	20562238	20562327	20562422	20562310	20562318	20562337
Customer Sample Ref.	TPBP128	TPBP128	TPBP128	TPBP132	TPBP132	TPBP132	TPBP132	TPBP133	TPBP133	TPBP133
AGS Ref.										
Depth	0.50 - 0.50	1.00 - 1.00	1.50 - 1.50	0.20 - 0.20	0.50 - 0.50	1.20 - 1.20	2.40 - 2.40	0.30 - 0.30	1.00 - 1.00	1.50 - 1.50
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
Ammonium Low	08-Sep-2019	08-Sep-2019		08-Sep-2019	08-Sep-2019	08-Sep-2019		09-Sep-2019	08-Sep-2019	
Ammonium Soil by Titration	29-Aug-2019	29-Aug-2019	29-Aug-2019	04-Sep-2019	29-Aug-2019	04-Sep-2019	29-Aug-2019	04-Sep-2019	04-Sep-2019	09-Sep-2019
Anions by Kone (soil)	07-Sep-2019	07-Sep-2019	03-Sep-2019	03-Sep-2019	03-Sep-2019	07-Sep-2019	07-Sep-2019	07-Sep-2019	03-Sep-2019	03-Sep-2019
Asbestos ID in Solid Samples	27-Aug-2019	27-Aug-2019	27-Aug-2019	30-Aug-2019	30-Aug-2019	30-Aug-2019	02-Sep-2019	29-Aug-2019	29-Aug-2019	29-Aug-2019
Asbestos Quantification - Full		10-Sep-2019			09-Sep-2019				05-Sep-2019	
CEN 10:1 Leachate (1 Stage)	30-Aug-2019	30-Aug-2019		04-Sep-2019	30-Aug-2019	04-Sep-2019		04-Sep-2019	04-Sep-2019	
CEN Readings	03-Sep-2019	03-Sep-2019		06-Sep-2019	03-Sep-2019	06-Sep-2019		06-Sep-2019	06-Sep-2019	
Cyanide Comp/Free/Total/Thiocyanate	03-Sep-2019	03-Sep-2019	28-Aug-2019	09-Sep-2019	04-Sep-2019	09-Sep-2019	29-Aug-2019	09-Sep-2019	09-Sep-2019	02-Sep-2019
Dissolved Metals by ICP-MS	04-Sep-2019	04-Sep-2019		09-Sep-2019	13-Sep-2019	09-Sep-2019		09-Sep-2019	09-Sep-2019	
EPH CWG (Aliphatic) Aqueous GC (W)	04-Sep-2019	04-Sep-2019		09-Sep-2019	09-Sep-2019	09-Sep-2019		09-Sep-2019	09-Sep-2019	
EPH CWG (Aliphatic) GC (S)	30-Aug-2019	29-Aug-2019	29-Aug-2019	04-Sep-2019	29-Aug-2019	04-Sep-2019	28-Aug-2019	03-Sep-2019	04-Sep-2019	04-Sep-2019
EPH CWG (Aromatic) Aqueous GC (W)	04-Sep-2019	04-Sep-2019		09-Sep-2019	09-Sep-2019	09-Sep-2019		09-Sep-2019	09-Sep-2019	
EPH CWG (Aromatic) GC (S)	30-Aug-2019	29-Aug-2019	29-Aug-2019	04-Sep-2019	29-Aug-2019	04-Sep-2019	28-Aug-2019	03-Sep-2019	04-Sep-2019	04-Sep-2019
GRO by GC-FID (S)	03-Sep-2019	03-Sep-2019	06-Sep-2019	09-Sep-2019	09-Sep-2019	06-Sep-2019	09-Sep-2019	09-Sep-2019	09-Sep-2019	09-Sep-2019
GRO by GC-FID (W)	03-Sep-2019	03-Sep-2019		09-Sep-2019	03-Sep-2019	09-Sep-2019		09-Sep-2019	09-Sep-2019	
Mercury Dissolved	04-Sep-2019	04-Sep-2019		09-Sep-2019	06-Sep-2019	09-Sep-2019		09-Sep-2019	09-Sep-2019	
Metals in solid samples by OES	03-Sep-2019	03-Sep-2019	03-Sep-2019	04-Sep-2019	09-Sep-2019	09-Sep-2019	03-Sep-2019	09-Sep-2019	03-Sep-2019	03-Sep-2019
PAH by GCMS	28-Aug-2019	05-Sep-2019	05-Sep-2019	03-Sep-2019	28-Aug-2019	02-Sep-2019	28-Aug-2019	04-Sep-2019	03-Sep-2019	03-Sep-2019
PAH Spec MS - Aqueous (W)	04-Sep-2019	04-Sep-2019		09-Sep-2019	09-Sep-2019	09-Sep-2019		09-Sep-2019	09-Sep-2019	
pH	29-Aug-2019	09-Sep-2019	29-Aug-2019	09-Sep-2019	09-Sep-2019	03-Sep-2019	03-Sep-2019	09-Sep-2019	09-Sep-2019	03-Sep-2019
pH Value	04-Sep-2019	04-Sep-2019		09-Sep-2019	06-Sep-2019	06-Sep-2019		09-Sep-2019	09-Sep-2019	
Phenols by HPLC (S)	31-Aug-2019	28-Aug-2019	31-Aug-2019	03-Sep-2019	31-Aug-2019	05-Sep-2019	31-Aug-2019	04-Sep-2019	04-Sep-2019	04-Sep-2019
Phenols by HPLC (W)	03-Sep-2019	03-Sep-2019		07-Sep-2019	07-Sep-2019	09-Sep-2019		07-Sep-2019	07-Sep-2019	
Sample description	24-Aug-2019	24-Aug-2019	24-Aug-2019	28-Aug-2019	24-Aug-2019	28-Aug-2019	24-Aug-2019	28-Aug-2019	28-Aug-2019	28-Aug-2019
Total Organic Carbon	09-Sep-2019	09-Sep-2019	06-Sep-2019	03-Sep-2019	04-Sep-2019	06-Sep-2019	04-Sep-2019	09-Sep-2019	03-Sep-2019	03-Sep-2019
Total Sulphate	04-Sep-2019	06-Sep-2019	04-Sep-2019	04-Sep-2019	04-Sep-2019	06-Sep-2019	06-Sep-2019	05-Sep-2019	06-Sep-2019	06-Sep-2019
Total Sulphur	02-Sep-2019	02-Sep-2019	02-Sep-2019	02-Sep-2019	02-Sep-2019	06-Sep-2019	02-Sep-2019	04-Sep-2019	02-Sep-2019	02-Sep-2019
TPH CWG (W)	04-Sep-2019	04-Sep-2019		09-Sep-2019	09-Sep-2019	09-Sep-2019		09-Sep-2019	09-Sep-2019	
TPH CWG GC (S)	03-Sep-2019	03-Sep-2019	06-Sep-2019	09-Sep-2019	09-Sep-2019	06-Sep-2019	09-Sep-2019	09-Sep-2019	09-Sep-2019	09-Sep-2019
VOC MS (S)	30-Aug-2019	30-Aug-2019	05-Sep-2019	05-Sep-2019	05-Sep-2019	05-Sep-2019	05-Sep-2019	05-Sep-2019	05-Sep-2019	05-Sep-2019

Lab Sample No(s)	20562374	20562381	20562389	20561981	20561988	20561996	20562179	20562187	20562195	20562206
Customer Sample Ref.	TPBP137	TPBP137	TPBP137	TPBP140	TPBP140	TPBP140	WSBP101	WSBP101	WSBP102	WSBP102
AGS Ref.										
Depth	0.30 - 0.30	0.50 - 0.50	1.50 - 1.50	0.30 - 0.30	1.00 - 1.00	1.80 - 1.80	0.30 - 0.30	0.50 - 0.50	0.30 - 0.50	0.50 - 0.50
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
Ammonium Low	08-Sep-2019	08-Sep-2019		08-Sep-2019	08-Sep-2019		08-Sep-2019	08-Sep-2019	08-Sep-2019	08-Sep-2019
Ammonium Soil by Titration	04-Sep-2019	03-Sep-2019	03-Sep-2019	04-Sep-2019	06-Sep-2019	03-Sep-2019	29-Aug-2019	29-Aug-2019	29-Aug-2019	29-Aug-2019
Anions by Kone (soil)	03-Sep-2019	03-Sep-2019	03-Sep-2019	02-Sep-2019	02-Sep-2019	02-Sep-2019	07-Sep-2019	03-Sep-2019	07-Sep-2019	03-Sep-2019
Asbestos ID in Solid Samples	30-Aug-2019	30-Aug-2019	04-Sep-2019	30-Aug-2019	30-Aug-2019	03-Sep-2019	27-Aug-2019	28-Aug-2019	28-Aug-2019	28-Aug-2019
Asbestos Quantification - Full									10-Sep-2019	10-Sep-2019
CEN 10:1 Leachate (1 Stage)	04-Sep-2019	04-Sep-2019		30-Aug-2019	30-Aug-2019		29-Aug-2019	29-Aug-2019	30-Aug-2019	30-Aug-2019
CEN Readings	08-Sep-2019	08-Sep-2019		03-Sep-2019	03-Sep-2019		03-Sep-2019	03-Sep-2019	03-Sep-2019	03-Sep-2019
Cyanide Comp/Free/Total/Thiocyanate	09-Sep-2019	09-Sep-2019	02-Sep-2019	03-Sep-2019	05-Sep-2019	02-Sep-2019	03-Sep-2019	03-Sep-2019	03-Sep-2019	03-Sep-2019
Dissolved Metals by ICP-MS	09-Sep-2019	09-Sep-2019		04-Sep-2019	10-Sep-2019		04-Sep-2019	05-Sep-2019	04-Sep-2019	04-Sep-2019
EPH CWG (Aliphatic) Aqueous GC (W)	09-Sep-2019	09-Sep-2019		04-Sep-2019	09-Sep-2019		04-Sep-2019	04-Sep-2019	04-Sep-2019	04-Sep-2019
EPH CWG (Aliphatic) GC (S)	04-Sep-2019	04-Sep-2019	03-Sep-2019	04-Sep-2019	04-Sep-2019	04-Sep-2019	29-Aug-2019	28-Aug-2019	30-Aug-2019	30-Aug-2019
EPH CWG (Aromatic) Aqueous GC (W)	09-Sep-2019	09-Sep-2019		04-Sep-2019	09-Sep-2019		04-Sep-2019	04-Sep-2019	04-Sep-2019	04-Sep-2019
EPH CWG (Aromatic) GC (S)	04-Sep-2019	04-Sep-2019	03-Sep-2019	04-Sep-2019	04-Sep-2019	04-Sep-2019	29-Aug-2019	28-Aug-2019	30-Aug-2019	30-Aug-2019
GRO by GC-FID (S)	09-Sep-2019	09-Sep-2019	09-Sep-2019	03-Sep-2019	04-Sep-2019	03-Sep-2019	03-Sep-2019	03-Sep-2019	03-Sep-2019	03-Sep-2019
GRO by GC-FID (W)	09-Sep-2019	09-Sep-2019		03-Sep-2019	04-Sep-2019		03-Sep-2019	03-Sep-2019	03-Sep-2019	03-Sep-2019
Mercury Dissolved	10-Sep-2019	10-Sep-2019		04-Sep-2019	06-Sep-2019		04-Sep-2019	04-Sep-2019	04-Sep-2019	04-Sep-2019
Metals in solid samples by OES	03-Sep-2019	03-Sep-2019	03-Sep-2019	03-Sep-2019	04-Sep-2019	03-Sep-2019	03-Sep-2019	03-Sep-2019	04-Sep-2019	04-Sep-2019
PAH by GCMS	02-Sep-2019	02-Sep-2019	04-Sep-2019	03-Sep-2019	03-Sep-2019	03-Sep-2019	05-Sep-2019	05-Sep-2019	05-Sep-2019	28-Aug-2019
PAH Spec MS - Aqueous (W)	09-Sep-2019	09-Sep-2019		04-Sep-2019	09-Sep-2019		04-Sep-2019	04-Sep-2019	04-Sep-2019	04-Sep-2019
pH	09-Sep-2019	09-Sep-2019	06-Sep-2019	09-Sep-2019	09-Sep-2019	06-Sep-2019	29-Aug-2019	29-Aug-2019	09-Sep-2019	09-Sep-2019
pH Value	09-Sep-2019	09-Sep-2019		04-Sep-2019	05-Sep-2019		04-Sep-2019	03-Sep-2019	04-Sep-2019	04-Sep-2019
Phenols by HPLC (S)	07-Sep-2019	03-Sep-2019	05-Sep-2019	03-Sep-2019	03-Sep-2019	10-Sep-2019	30-Aug-2019	31-Aug-2019	30-Aug-2019	31-Aug-2019
Phenols by HPLC (W)	07-Sep-2019	07-Sep-2019		03-Sep-2019	09-Sep-2019		03-Sep-2019	03-Sep-2019	03-Sep-2019	03-Sep-2019
Sample description	28-Aug-2019	28-Aug-2019	29-Aug-2019	28-Aug-2019	28-Aug-2019	28-Aug-2019	24-Aug-2019	24-Aug-2019	24-Aug-2019	24-Aug-2019
Total Organic Carbon	03-Sep-2019	04-Sep-2019	09-Sep-2019	04-Sep-2019	06-Sep-2019	06-Sep-2019	06-Sep-2019	05-Sep-2019	03-Sep-2019	09-Sep-2019
Total Sulphate	04-Sep-2019	06-Sep-2019	04-Sep-2019	04-Sep-2019	04-Sep-2019	04-Sep-2019	04-Sep-2019	04-Sep-2019	06-Sep-2019	04-Sep-2019
Total Sulphur	02-Sep-2019	02-Sep-2019	02-Sep-2019	02-Sep-2019	02-Sep-2019	02-Sep-2019	02-Sep-2019	02-Sep-2019	02-Sep-2019	02-Sep-2019
TPH CWG (W)	09-Sep-2019	09-Sep-2019		04-Sep-2019	09-Sep-2019		04-Sep-2019	04-Sep-2019	04-Sep-2019	04-Sep-2019
TPH CWG GC (S)	09-Sep-2019	09-Sep-2019	09-Sep-2019	04-Sep-2019	04-Sep-2019	04-Sep-2019	03-Sep-2019	03-Sep-2019	03-Sep-2019	03-Sep-2019
VOC MS (S)	05-Sep-2019	05-Sep-2019	05-Sep-2019	03-Sep-2019	03-Sep-2019	03-Sep-2019	30-Aug-2019	30-Aug-2019	03-Sep-2019	30-Aug-2019

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CERTIFICATE OF ANALYSIS

SDG:	190821-98	**Client Reference:**		**Report Number:**	521349
Location:	Llanwern	**Order Number:**	LLA650	**Superseded Report:**	520860

Lab Sample No(s)	20562270	20562278	20562213	20562222	20562463	20562471
Customer Sample Ref.	WSBP103	WSBP103	WSBP106	WSBP106	WSBP107	WSBP107
AGS Ref.						
Depth	0.30 - 0.30	0.50 - 0.50	0.30 - 0.30	0.50 - 0.50	0.30 - 0.30	0.50 - 0.50
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
Ammonium Low	08-Sep-2019	08-Sep-2019	08-Sep-2019	08-Sep-2019	08-Sep-2019	09-Sep-2019
Ammonium Soil by Titration	03-Sep-2019	04-Sep-2019	30-Aug-2019	30-Aug-2019	03-Sep-2019	06-Sep-2019
Anions by Kone (soil)	03-Sep-2019	03-Sep-2019	03-Sep-2019	03-Sep-2019	03-Sep-2019	03-Sep-2019
Asbestos ID in Solid Samples	29-Aug-2019	29-Aug-2019	27-Aug-2019	27-Aug-2019	29-Aug-2019	30-Aug-2019
Asbestos Quantification - Full				10-Sep-2019		
CEN 10:1 Leachate (1 Stage)	30-Aug-2019	30-Aug-2019	30-Aug-2019	29-Aug-2019	30-Aug-2019	04-Sep-2019
CEN Readings	03-Sep-2019	03-Sep-2019	03-Sep-2019	03-Sep-2019	03-Sep-2019	06-Sep-2019
Cyanide Comp/Free/Total/Thiocyanate	04-Sep-2019	04-Sep-2019	03-Sep-2019	03-Sep-2019	04-Sep-2019	09-Sep-2019
Dissolved Metals by ICP-MS	11-Sep-2019	11-Sep-2019	05-Sep-2019	05-Sep-2019	11-Sep-2019	09-Sep-2019
EPH CWG (Aliphatic) Aqueous GC (W)	09-Sep-2019	09-Sep-2019	04-Sep-2019	04-Sep-2019	09-Sep-2019	09-Sep-2019
EPH CWG (Aliphatic) GC (S)	04-Sep-2019	04-Sep-2019	30-Aug-2019	29-Aug-2019	04-Sep-2019	03-Sep-2019
EPH CWG (Aromatic) Aqueous GC (W)	09-Sep-2019	09-Sep-2019	04-Sep-2019	04-Sep-2019	09-Sep-2019	09-Sep-2019
EPH CWG (Aromatic) GC (S)	04-Sep-2019	04-Sep-2019	30-Aug-2019	29-Aug-2019	04-Sep-2019	03-Sep-2019
GRO by GC-FID (S)	09-Sep-2019	09-Sep-2019	03-Sep-2019	03-Sep-2019	09-Sep-2019	09-Sep-2019
GRO by GC-FID (W)	03-Sep-2019	03-Sep-2019	03-Sep-2019	03-Sep-2019	03-Sep-2019	09-Sep-2019
Mercury Dissolved	06-Sep-2019	06-Sep-2019	04-Sep-2019	04-Sep-2019	06-Sep-2019	09-Sep-2019
Metals in solid samples by OES	04-Sep-2019	04-Sep-2019	04-Sep-2019	03-Sep-2019	04-Sep-2019	04-Sep-2019
PAH by GCMS	30-Aug-2019	30-Aug-2019	05-Sep-2019	05-Sep-2019	30-Aug-2019	04-Sep-2019
PAH Spec MS - Aqueous (W)	09-Sep-2019	09-Sep-2019	04-Sep-2019	04-Sep-2019	09-Sep-2019	09-Sep-2019
pH	09-Sep-2019	09-Sep-2019	29-Aug-2019	09-Sep-2019	03-Sep-2019	09-Sep-2019
pH Value	06-Sep-2019	06-Sep-2019	04-Sep-2019	03-Sep-2019	06-Sep-2019	09-Sep-2019
Phenols by HPLC (S)	04-Sep-2019	04-Sep-2019	31-Aug-2019	31-Aug-2019	03-Sep-2019	05-Sep-2019
Phenols by HPLC (W)	05-Sep-2019	07-Sep-2019	03-Sep-2019	03-Sep-2019	07-Sep-2019	07-Sep-2019
Sample description	28-Aug-2019	28-Aug-2019	24-Aug-2019	24-Aug-2019	28-Aug-2019	28-Aug-2019
Total Organic Carbon	03-Sep-2019	03-Sep-2019	09-Sep-2019	03-Sep-2019	03-Sep-2019	03-Sep-2019
Total Sulphate	04-Sep-2019	04-Sep-2019	06-Sep-2019	04-Sep-2019	04-Sep-2019	04-Sep-2019
Total Sulphur	02-Sep-2019	02-Sep-2019	02-Sep-2019	02-Sep-2019	02-Sep-2019	02-Sep-2019
TPH CWG (W)	09-Sep-2019	09-Sep-2019	04-Sep-2019	04-Sep-2019	09-Sep-2019	09-Sep-2019
TPH CWG GC (S)	09-Sep-2019	09-Sep-2019	03-Sep-2019	03-Sep-2019	09-Sep-2019	09-Sep-2019
VOC MS (S)	05-Sep-2019	05-Sep-2019	03-Sep-2019	30-Aug-2019	05-Sep-2019	05-Sep-2019

Appendix General

1. Results are expressed on a dry weight basis (dried at 35ºC) for all soil analyses except for the following: NRA and CEN Leach tests, flash point LOI, pH, ammonium as NH4 by the BRE method, VOC TICs and SVOC TICs.

2. If sufficient sample is received a sub sample will be retained free of charge for 30 days after analysis is completed (e-mailed) for all sample types unless the sample is destroyed on testing. The prepared soil sub sample that is analysed for asbestos will be retained for a period of 6 months after the analysis date. All bulk samples will be retained for a period of 6 months after the analysis date. All samples received and not scheduled will be disposed of one month after the date of receipt unless we are instructed to the contrary. Once the initial period has expired, a storage charge will be applied for each month or part thereof until the client cancels the request for sample storage. ALS reserve the right to charge for samples received and stored but not analysed.

3. With respect to turnaround, we will always endeavour to meet client requirements wherever possible, but turnaround times cannot be absolutely guaranteed due to so many variables beyond our control.

4. We take responsibility for any test performed by sub-contractors (marked with an asterisk). We endeavour to use UKAS/MCERTS Accredited Laboratories, who either complete a quality questionnaire or are audited by ourselves. For some determinands there are no UKAS/MCERTS Accredited Laboratories, in this instance a laboratory with a known track record will be utilised.

5. If no separate volatile sample is supplied by the client, or if a headspace or sediment is present in the volatile sample, the integrity of the data may be compromised. This will be flagged up as an invalid VOC on the test schedule and the result marked as deviating on the test certificate.

6. NDP - No determination possible due to insufficient/unsuitable sample.

7. Results relate only to the items tested.

8. LoDs (Limit of Detection) for wet tests reported on a dry weight basis are not corrected for moisture content.

9. **Surrogate recoveries** - Surrogates are added to your sample to monitor recovery of the test requested. A % recovery is reported, results are not corrected for the recovery measured. Typical recoveries for organics tests are 70-130%. Recoveries in soils are affected by organic rich or clay rich matrices. Waters can be affected by remediation fluids or high amounts of sediment. Test results are only ever reported if all of the associated quality checks pass; it is assumed that all recoveries outside of the values above are due to matrix affect.

10. Stones/debris are not routinely removed. We always endeavour to take a representative sub sample from the received sample.

11. In certain circumstances the method detection limit may be elevated due to the sample being outside the calibration range. Other factors that may contribute to this include possible interferences. In both cases the sample would be diluted which would cause the method detection limit to be raised.

12. Mercury results quoted on soils will not include volatile mercury as the analysis is performed on a dried and crushed sample.

13. For leachate preparations other than Zero Headspace Extraction (ZHE) volatile loss may occur.

14. For the BSEN 12457-3 two batch process to allow the cumulative release to be calculated, the volume of the leachate produced is measured and filtered for all tests. We therefore cannot carry out any unfiltered analysis. The tests affected include volatiles GCFID/GCMS and all subcontracted analysis.

15. Analysis and identification of specific compounds using GCFID is by retention time only, and we routinely calibrate and quantify for benzene, toluene, ethylbenzenes and xylenes (BTEX). For total volatiles in the C5-C12 range, the total area of the chromatogram is integrated and expressed as ug/kg or ug/l. Although this analysis is commonly used for the quantification of gasoline range organics (GRO), the system will also detect other compounds such as chlorinated solvents, and this may lead to a falsely high result with respect to hydrocarbons only. It is not possible to specifically identify these non-hydrocarbons, as standards are not routinely run for any other compounds, and for more definitive identification, volatiles by GCMS should be utilised.

16. We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample. Other coarse granular material such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

17. **Tentatively Identified Compounds (TICs)** are non-target peaks in VOC and SVOC analysis. All non-target peaks detected with a concentration above the LoD are subjected to a mass spectral library search. Non-target peaks with a library search confidence of >75% are reported based on the best mass spectral library match. When a non-target peak with a library search confidence of <75% is detected it is reported as "mixed hydrocarbons". Non-target compounds identified from the scan data are semi-quantified relative to one of the deuterated internal standards, under the same chromatographic conditions as the target compounds. This result is reported as a semi-quantitative value and reported as Tentatively Identified Compounds (TICs). TICs are outside the scope of UKAS accreditation and are not moisture corrected.

18. **Sample Deviations**

If a sample is classed as deviated then the associated results may be compromised.

1	**Container with Headspace provided for volatiles analysis**
2	**Incorrect container received**
3	**Deviation from method**
§	**Sampled on date not provided**
♦	**Sample holding time exceeded in laboratory**
@	**Sample holding time exceeded due to late arrival of instructions or samples**

19. **Asbestos**

When requested, the individual sub sample scheduled will be analysed in house for the presence of asbestos fibres and asbestos containing material by our documented in house method TM048 based on HSG 248 (2005), which is accredited to ISO17025. If a specific asbestos fibre type is not found this will be reported as "Not detected". If no asbestos fibre types are found all will be reported as "Not detected" and the sub sample analysed deemed to be clear of asbestos. If an asbestos fibre type is found it will be reported as detected (for each fibre type found). Testing can be carried out on asbestos positive samples, but, due to Health and Safety considerations, may be replaced by alternative tests or reported as No Determination Possible (NDP). The quantity of

Identification of Asbestos in Bulk Materials & Soils

The results for identification of asbestos in bulk materials are obtained from supplied bulk materials which have been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

The results for identification of asbestos in soils are obtained from a homogenised sub sample which has been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

Asbestos Type	Common Name
Chrysotile	White Asbestos
Amosite	Brown Asbestos
Crocidolite	Blue Asbestos
Fibrous Actinolite	-
Fibrous Anthophyllite	-
Fibrous Tremolite	-

Visual Estimation Of Fibre Content

Estimation of fibre content is not permitted as part of our UKAS accredited test other than: - Trace - Where only one or two asbestos fibres were identified.

Respirable Fibres

Respirable fibres are defined as fibres of <3 µm diameter, longer than 5 µm and with aspect ratios of at least 3:1 that can be inhaled into the lower regions of the lung and are generally acknowledged to be most important predictor of hazard and risk for cancers of the lung.
Standing Committee of Analysts, *The Quantification of Asbestos in Soil (2107).*

Further guidance on typical asbestos fibre content of manufactured products can be found in HSG 264.

The identification of asbestos containing materials and soils falls within our schedule of tests for which we hold UKAS accreditation, however opinions, interpretations and all other information contained in the report are outside the scope of UKAS accreditation.

Unit 7-8 Hawarden Business Park
Manor Road (off Manor Lane)
Hawarden
Deeside
CH5 3US
Tel: (01244) 528700
Fax: (01244) 528701
email: hawardencustomerservices@alsglobal.com
Website: www.alsenvironmental.co.uk

Atkins Global Ltd
Project Jonah site office
Llan Coed House
Suite 24
Coed Darcy
Llandarcy
SA10 6HJ

Attention: Scott Bowler

CERTIFICATE OF ANALYSIS

Date of report Generation:	23 September 2019
Customer:	Atkins Global Ltd
Sample Delivery Group (SDG):	190828-36
Your Reference:	
Location:	Llanwern
Report No:	522548

This report has been revised and directly supersedes 521395 in its entirety.

We received 64 samples on Wednesday August 28, 2019 and 64 of these samples were scheduled for analysis which was completed on Tuesday September 17, 2019. Accredited laboratory tests are defined within the report, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation.

Should this report require incorporation into client reports, it must be used in its entirety and not simply with the data sections alone.

Chemical testing (unless subcontracted) performed at ALS Life Sciences Ltd Hawarden (Method codes TM) or ALS Life Sciences Ltd Aberdeen (Method codes S).

All sample data is provided by the customer. The reported results relate to the sample supplied, and on the basis that this data is correct.
Incorrect sampling dates and/or sample information will affect the validity of results.
The customer is not permitted to reproduce this report except in full without the approval of the laboratory.

Approved By:

Sonia McWhan
Operations Manager

CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
20598637	BHCP105		0.30 - 0.30	20/08/2019
20598655	BHCP105		0.50 - 0.50	20/08/2019
20598666	BHCP105		1.00 - 1.00	20/08/2019
20598446	CPB5		4.00 - 4.00	22/08/2019
20598438	CPB5		7.80 - 7.80	22/08/2019
20598427	CPB5		8.70 - 8.70	22/08/2019
20598824	CPB7		2.70 - 2.70	21/08/2019
20598832	CPB7		4.70 - 4.70	21/08/2019
20598839	CPB7		6.60 - 6.60	21/08/2019
20598847	CPB9		3.50 - 3.50	19/08/2019
20598859	CPB9		6.50 - 6.50	19/08/2019
20598882	CPB9		7.60 - 7.60	19/08/2019
20598896	CPB9		8.60 - 8.60	19/08/2019
20598788	CPB11		3.50 - 3.50	20/08/2019
20598798	CPB11		5.50 - 5.50	20/08/2019
20598808	CPB11		9.50 - 9.50	20/08/2019
20598531	CPB13		10.10 - 10.10	22/08/2019
20598492	CPB13		2.20 - 2.20	22/08/2019
20598466	CPB13		4.20 - 4.20	22/08/2019
20598207	CPB18		0.30 - 0.30	21/08/2019
20598340	CPB18		0.50 - 0.50	21/08/2019
20598478	CPB18		1.90 - 1.90	21/08/2019
20598715	CPBP101		0.30 - 0.30	20/08/2019
20598729	CPBP101		1.00 - 1.00	20/08/2019
20598741	CPBP101		1.50 - 1.50	20/08/2019
20598911	CPBR3		3.40 - 3.40	20/08/2019
20598922	CPBR3		4.80 - 4.80	20/08/2019
20598930	CPBR3		7.40 - 7.40	20/08/2019
20598817	CPBR3		9.10 - 9.10	20/08/2019
20598217	CPBR4		2.50 - 2.50	21/08/2019
20598227	CPBR4		3.50 - 3.50	21/08/2019
20598239	CPBR4		7.50 - 7.50	21/08/2019
20598248	CPBR4		9.40 - 9.40	21/08/2019
20598939	CPBR9		3.10 - 3.10	21/08/2019
20598946	CPBR9		4.20 - 4.20	21/08/2019
20598956	CPBR9		8.80 - 8.80	21/08/2019
20598388	WS01		0.30 - 0.30	22/08/2019
20598407	WS01		0.50 - 0.50	22/08/2019
20598417	WS01		1.80 - 1.80	22/08/2019
20598362	WS04		0.30 - 0.30	22/08/2019
20598372	WS04		1.00 - 1.00	22/08/2019
20598505	WS04		3.40 - 3.80	22/08/2019
20598264	WS13		0.30 - 0.30	22/08/2019
20598278	WS13		0.50 - 0.50	22/08/2019
20598286	WS13		1.00 - 1.00	22/08/2019
20598295	WS13		1.80 - 1.80	22/08/2019
20598310	WS19		0.30 - 0.30	22/08/2019
20598327	WS19		1.00 - 1.00	22/08/2019
20598351	WS19		1.80 - 1.80	22/08/2019
20598518	WS20		1.80 - 1.80	22/08/2019
20598585	WSBP104		0.30 - 0.30	20/08/2019
20598597	WSBP104		1.00 - 1.00	20/08/2019
20598613	WSBP104		1.80 - 1.80	20/08/2019
20598682	WSBP105		0.30 - 0.30	20/08/2019
20598696	WSBP105		1.00 - 1.00	20/08/2019
20598707	WSBP105		1.40 - 1.40	20/08/2019
20598541	WSBP108		0.30 - 0.30	20/08/2019

CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

20598552	WSBP108	1.00 - 1.00	20/08/2019
20598565	WSBP108	1.50 - 1.50	20/08/2019
20598757	WSBP108	2.10 - 2.50	20/08/2019
20598778	WSBP108	3.40 - 4.00	20/08/2019
20598625	WSBP109	0.30 - 0.30	21/08/2019
20598767	WSBP109	1.00 - 1.00	21/08/2019
20598871	WSBP109	1.60 - 1.60	21/08/2019

Maximum Sample/Coolbox Temperature (°C) : **14.6**

ISO5667-3 Water quality - Sampling - Part3 -

During Transportation samples shall be stored in a cooling device capable of maintaining a temperature of (5±3)°C.

ALS have data which show that a cool box with 4 frozen icepacks is capable of maintaining pre-chilled samples at a temperature of (5±3)°C for a period of up to 24hrs.

Only received samples which have had analysis scheduled will be shown on the following pages.

Validated

CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

Results Legend

X Test

N No Determination Possible

Sample Types -
S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

			Lab Sample No(s)	20598637			20598655			20598666			20598446			20598438			20598427			20598824
			Customer Sample Reference	BHCP105			BHCP105			BHCP105			CPB5			CPB5			CPB5			CPB7
			AGS Reference																			
			Depth (m)	0.30 - 0.30			0.50 - 0.50			1.00 - 1.00			4.00 - 4.00			7.80 - 7.80			8.70 - 8.70			2.70 - 2.70
			Container	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB
			Sample Type	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
Ammonium Low	All	NDPs: 0 Tests: 54		X			X			X			X			X			X			X
Ammonium Soil by Titration	All	NDPs: 0 Tests: 64			X			X			X			X			X			X		
Anions by Kone (soil)	All	NDPs: 3 Tests: 61			X			X			X			X			X			X		
Asbestos ID in Solid Samples	All	NDPs: 1 Tests: 63		X			X			X			X			X			X			X
CEN Readings	All	NDPs: 0 Tests: 54		X			X			X			X			X			X			X
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 118		X	X		X	X		X	X		X	X		X	X		X	X		X
Dissolved Metals by ICP-MS	All	NDPs: 0 Tests: 54		X			X			X			X			X			X			X
EPH CWG (Aliphatic) Aqueous GC (W)	All	NDPs: 0 Tests: 54		X			X			X			X			X			X			X
EPH CWG (Aliphatic) GC (S)	All	NDPs: 0 Tests: 64			X			X			X			X			X			X		
EPH CWG (Aromatic) Aqueous GC (W)	All	NDPs: 0 Tests: 54		X			X			X			X			X			X			X
EPH CWG (Aromatic) GC (S)	All	NDPs: 0 Tests: 64			X			X			X			X			X			X		
GRO by GC-FID (S)	All	NDPs: 1 Tests: 63				X			X			X			X			X			X		
GRO by GC-FID (W)	All	NDPs: 0 Tests: 54		X			X			X			X			X			X			X
Mercury Dissolved	All	NDPs: 0 Tests: 54		X			X			X			X			X			X			X
Metals in solid samples by OES	All	NDPs: 1 Tests: 63			X			X			X			X			X			X		

20598788	CPB11		3.50 - 3.50	1kg TUB	S	X				X	X	X	X	X		X			X	X	
20598896	CPB9		8.60 - 8.60	60g VOC (ALE215)	S													X			
				250g Amber Jar (ALE210)	S		X		X			X			X		X				X
				1kg TUB	S	X				X	X	X	X	X		X			X	X	
20598882	CPB9		7.60 - 7.60	60g VOC (ALE215)	S													X			
				250g Amber Jar (ALE210)	S		X		X			X			X		X				X
				1kg TUB	S	X				X	X	X	X	X		X			X	X	
20598859	CPB9		6.50 - 6.50	60g VOC (ALE215)	S													X			
				250g Amber Jar (ALE210)	S		X	N				X			X		X				X
				1kg TUB	S	X				X	X	X	X	X		X			X	X	
20598847	CPB9		3.50 - 3.50	60g VOC (ALE215)	S													X			
				250g Amber Jar (ALE210)	S		X	N				X			X		X				X
				1kg TUB	S	X				X	X	X	X	X		X			X	X	
20598839	CPB7		6.60 - 6.60	60g VOC (ALE215)	S													X			
				250g Amber Jar (ALE210)	S		X		X			X			X		X				X
				1kg TUB	S	X				X	X	X	X	X		X			X	X	
20598832	CPB7		4.70 - 4.70	60g VOC (ALE215)	S													X			
				250g Amber Jar (ALE210)	S		X		X			X			X		X				X
				1kg TUB	S	X				X	X	X	X	X		X			X	X	
20598824	CPB7		2.70 - 2.70	60g VOC (ALE215)	S													X			
				250g Amber Jar (ALE210)	S		X		X			X			X		X				X

Validated

CERTIFICATE OF ANALYSIS

SDG: 190828-36	**Client Reference:**	**Report Number:** 522548	
Location: Llanwern	**Order Number:** LLA654	**Superseded Report:** 521395	

Results Legend

X Test

N No Determination Possible

Sample Types -

S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

Lab Sample No(s)			20598637			20598655			20598666			20598446			20598438			20598427			20598824
Customer Sample Reference			BHCP105			BHCP105			BHCP105			CPB5			CPB5			CPB5			CPB7
AGS Reference																					
Depth (m)			0.30 - 0.30			0.50 - 0.50			1.00 - 1.00			4.00 - 4.00			7.80 - 7.80			8.70 - 8.70			2.70 - 2.70
Container			1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB
Sample Type			S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
PAH by GCMS	All	NDPs: 0 Tests: 64		X			X			X			X			X			X		
PAH Spec MS - Aqueous (W)	All	NDPs: 0 Tests: 54	X			X			X			X			X			X			X
pH	All	NDPs: 0 Tests: 64		X			X			X			X			X			X		
pH Value	All	NDPs: 0 Tests: 54	X			X			X			X			X			X			X
Phenols by HPLC (S)	All	NDPs: 0 Tests: 64		X			X			X			X			X			X		
Phenols by HPLC (W)	All	NDPs: 0 Tests: 54	X			X			X			X			X			X			X
Sample description	All	NDPs: 0 Tests: 64		X			X			X			X			X			X		
Total Organic Carbon	All	NDPs: 1 Tests: 63		X			X			X			X			X			X		
Total Sulphate	All	NDPs: 1 Tests: 63		X			X			X			X			X			X		
Total Sulphur	All	NDPs: 1 Tests: 63		X			X			X			X			X			X		
TPH CWG (W)	All	NDPs: 0 Tests: 54	X			X			X			X			X			X			X
TPH CWG GC (S)	All	NDPs: 1 Tests: 63		X			X			X			X			X			X		
VOC MS (S)	All	NDPs: 1 Tests: 63			X			X			X			X			X			X	

17:09:02 23/09/2019

20598788	CPB11		3.50 - 3.50	1kg TUB	S		X		X		X					X		
20598896	CPB9		8.60 - 8.60	60g VOC (ALE215)	S													X
				250g Amber Jar (ALE210)	S	X		X		X		X	X	X	X		X	
				1kg TUB	S		X		X		X					X		
20598882	CPB9		7.60 - 7.60	60g VOC (ALE215)	S													X
				250g Amber Jar (ALE210)	S	X		X		X		X	X	X	X		X	
				1kg TUB	S		X		X		X					X		
20598859	CPB9		6.50 - 6.50	60g VOC (ALE215)	S													X
				250g Amber Jar (ALE210)	S	X		X		X		X	X	X	X		X	
				1kg TUB	S		X		X		X					X		
20598847	CPB9		3.50 - 3.50	60g VOC (ALE215)	S													X
				250g Amber Jar (ALE210)	S	X		X		X		X	X	X	X		X	
				1kg TUB	S		X		X		X					X		
20598839	CPB7		6.60 - 6.60	60g VOC (ALE215)	S													X
				250g Amber Jar (ALE210)	S	X		X		X		X	X	X	X		X	
				1kg TUB	S		X		X		X					X		
20598832	CPB7		4.70 - 4.70	60g VOC (ALE215)	S													X
				250g Amber Jar (ALE210)	S	X		X		X		X	X	X	X		X	
				1kg TUB	S		X		X		X					X		
20598824	CPB7		2.70 - 2.70	60g VOC (ALE215)	S													X
				250g Amber Jar (ALE210)	S	X		X		X		X	X	X	X		X	

Validated

CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

Results Legend

X Test

N No Determination Possible

Sample Types -

S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

Lab Sample No(s)			20598788		20598798			20598808			20598531			20598492			20598466			20598207
Customer Sample Reference			CPB11		CPB11			CPB11			CPB13			CPB13			CPB13			CPB18
AGS Reference																				
Depth (m)			3.50 - 3.50		5.50 - 5.50			9.50 - 9.50			10.10 - 10.10			2.20 - 2.20			4.20 - 4.20			0.30 - 0.30
Container			250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)
Sample Type			S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
Ammonium Low	All	NDPs: 0 Tests: 54			X			X			X			X			X			X	
Ammonium Soil by Titration	All	NDPs: 0 Tests: 64	X			X			X			X			X			X			X
Anions by Kone (soil)	All	NDPs: 3 Tests: 61	X			X			X			X			X			X			X
Asbestos ID in Solid Samples	All	NDPs: 1 Tests: 63			X			X			X			X			X			X	
Asbestos Quantification - Full	All	NDPs: 1 Tests: 3																			
CEN Readings	All	NDPs: 0 Tests: 54			X			X			X			X			X			X	
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 118	X		X	X		X	X		X	X		X	X		X	X		X	X
Dissolved Metals by ICP-MS	All	NDPs: 0 Tests: 54			X			X			X			X			X			X	
EPH CWG (Aliphatic) Aqueous GC (W)	All	NDPs: 0 Tests: 54			X			X			X			X			X			X	
EPH CWG (Aliphatic) GC (S)	All	NDPs: 0 Tests: 64	X			X			X			X			X			X			X
EPH CWG (Aromatic) Aqueous GC (W)	All	NDPs: 0 Tests: 54			X			X			X			X			X			X	
EPH CWG (Aromatic) GC (S)	All	NDPs: 0 Tests: 64	X			X			X			X			X			X			X
GRO by GC-FID (S)	All	NDPs: 1 Tests: 63		X			X			X			X			X			X		
GRO by GC-FID (W)	All	NDPs: 0 Tests: 54			X			X			X			X			X			X	
Mercury Dissolved	All	NDPs: 0 Tests: 54			X			X			X			X			X			X	

20598922	CPBR3		4.80 - 4.80	250g Amber Jar (ALE210)	S			x		x					x				x			x			
				1kg TUB	S		x				x			x	x	x	x			x				x	x
20598911	CPBR3		3.40 - 3.40	60g VOC (ALE215)	S																		x		
				250g Amber Jar (ALE210)	S			x		x					x				x			x			
				1kg TUB	S		x				x			x	x	x	x			x				x	x
20598741	CPBP101		1.50 - 1.50	60g VOC (ALE215)	S																		x		
				250g Amber Jar (ALE210)	S			x		x					x				x			x			
				1kg TUB	S		x				x			x	x	x	x			x				x	x
20598729	CPBP101		1.00 - 1.00	60g VOC (ALE215)	S																		x		
				250g Amber Jar (ALE210)	S			x		x					x				x			x			
				1kg TUB	S		x				x	x		x	x	x	x			x				x	x
20598715	CPBP101		0.30 - 0.30	60g VOC (ALE215)	S																		x		
				250g Amber Jar (ALE210)	S			x		x					x				x			x			
				1kg TUB	S		x				x			x	x	x	x			x				x	x
20598478	CPB18		1.90 - 1.90	60g VOC (ALE215)	S																		x		
				250g Amber Jar (ALE210)	S			x		x					x				x			x			
				1kg TUB	S						x	x													
20598340	CPB18		0.50 - 0.50	60g VOC (ALE215)	S																		x		
				250g Amber Jar (ALE210)	S			x		x					x				x			x			
				1kg TUB	S		x				x			x	x	x	x			x				x	x
20598207	CPB18		0.30 - 0.30	60g VOC (ALE215)	S																		x		

Validated

CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

Results Legend

X Test

N No Determination Possible

Sample Types -

S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

Lab Sample No(s)			20598788		20598798			20598808			20598531			20598492			20598466			20598207
Customer Sample Reference			CPB11		CPB11			CPB11			CPB13			CPB13			CPB13			CPB18
AGS Reference																				
Depth (m)			3.50 - 3.50		5.50 - 5.50			9.50 - 9.50			10.10 - 10.10			2.20 - 2.20			4.20 - 4.20			0.30 - 0.30
Container			250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)
Sample Type			S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
Metals in solid samples by OES	All	NDPs: 1 Tests: 63	X			X			X			X			X			X			X
PAH by GCMS	All	NDPs: 0 Tests: 64	X			X			X			X			X			X			X
PAH Spec MS - Aqueous (W)	All	NDPs: 0 Tests: 54			X			X			X			X			X			X	
pH	All	NDPs: 0 Tests: 64	X			X			X			X			X			X			X
pH Value	All	NDPs: 0 Tests: 54			X			X			X			X			X			X	
Phenols by HPLC (S)	All	NDPs: 0 Tests: 64	X			X			X			X			X			X			X
Phenols by HPLC (W)	All	NDPs: 0 Tests: 54			X			X			X			X			X			X	
Sample description	All	NDPs: 0 Tests: 64	X			X			X			X			X			X			X
Total Organic Carbon	All	NDPs: 1 Tests: 63	X			X			X			X			X			X			X
Total Sulphate	All	NDPs: 1 Tests: 63	X			X			X			X			X			X			X
Total Sulphur	All	NDPs: 1 Tests: 63	X			X			X			X			X			X			X
TPH CWG (W)	All	NDPs: 0 Tests: 54			X			X			X			X			X			X	
TPH CWG GC (S)	All	NDPs: 1 Tests: 63	X			X			X			X			X			X			X
VOC MS (S)	All	NDPs: 1 Tests: 63		X			X			X			X			X			X		

20598922	CPBR3		4.80 - 4.80	250g Amber Jar (ALE210)	S	X	X		X		X		X	X	X	X		X				
				1kg TUB	S			X		X		X					X					
20598911	CPBR3		3.40 - 3.40	60g VOC (ALE215)	S																	X
				250g Amber Jar (ALE210)	S	X	X		X		X		X	X	X	X		X				
				1kg TUB	S			X		X		X					X					
20598741	CPBP101		1.50 - 1.50	60g VOC (ALE215)	S																	X
				250g Amber Jar (ALE210)	S	X	X		X		X		X	X	X	X		X				
				1kg TUB	S			X		X		X					X					
20598729	CPBP101		1.00 - 1.00	60g VOC (ALE215)	S																	X
				250g Amber Jar (ALE210)	S	X	X		X		X		X	X	X	X		X				
				1kg TUB	S			X		X		X					X					
20598715	CPBP101		0.30 - 0.30	60g VOC (ALE215)	S																	X
				250g Amber Jar (ALE210)	S	X	X		X		X		X	X	X	X		X				
				1kg TUB	S			X		X		X					X					
20598478	CPB18		1.90 - 1.90	60g VOC (ALE215)	S																	X
				250g Amber Jar (ALE210)	S	X	X		X		X		X	X	X	X		X				
				1kg TUB	S																	
20598340	CPB18		0.50 - 0.50	60g VOC (ALE215)	S																	X
				250g Amber Jar (ALE210)	S	X	X		X		X		X	X	X	X		X				
				1kg TUB	S			X		X		X					X					
20598207	CPB18		0.30 - 0.30	60g VOC (ALE215)	S																	X

Validated

CERTIFICATE OF ANALYSIS

SDG: 190828-36 **Client Reference:** **Report Number:** 522548
Location: Llanwern **Order Number:** LLA654 **Superseded Report:** 521395

Results Legend

X Test

N No Determination Possible

Sample Types -

S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

			Lab Sample No(s)	20598922	20598930			20598817			20598217			20598227			20598239			20598248		
			Customer Sample Reference	CPBR3	CPBR3			CPBR3			CPBR4			CPBR4			CPBR4			CPBR4		
			AGS Reference																			
			Depth (m)	4.80 - 4.80	7.40 - 7.40			9.10 - 9.10			2.50 - 2.50			3.50 - 3.50			7.50 - 7.50			9.40 - 9.40		
			Container	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)
			Sample Type	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
Ammonium Low	All	NDPs: 0 Tests: 54			X			X			X			X			X					
Ammonium Soil by Titration	All	NDPs: 0 Tests: 64				X			X			X			X			X			X	
Anions by Kone (soil)	All	NDPs: 3 Tests: 61				X			X			X			X			X			X	
Asbestos ID in Solid Samples	All	NDPs: 1 Tests: 63			X			X			X			X			X			X		
Asbestos Quantification - Full	All	NDPs: 1 Tests: 3																				
CEN Readings	All	NDPs: 0 Tests: 54			X			X			X			X			X					
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 118			X	X		X	X		X	X		X	X		X	X			X	
Dissolved Metals by ICP-MS	All	NDPs: 0 Tests: 54			X			X			X			X			X					
EPH CWG (Aliphatic) Aqueous GC (W)	All	NDPs: 0 Tests: 54			X			X			X			X			X					
EPH CWG (Aliphatic) GC (S)	All	NDPs: 0 Tests: 64				X			X			X			X			X			X	
EPH CWG (Aromatic) Aqueous GC (W)	All	NDPs: 0 Tests: 54			X			X			X			X			X					
EPH CWG (Aromatic) GC (S)	All	NDPs: 0 Tests: 64				X			X			X			X			X			X	
GRO by GC-FID (S)	All	NDPs: 1 Tests: 63	X				X			X			X			X			X				X
GRO by GC-FID (W)	All	NDPs: 0 Tests: 54			X			X			X			X			X					
Mercury Dissolved	All	NDPs: 0 Tests: 54			X			X			X			X			X					

20598362	WS04		0.30 - 0.30	60g VOC (ALE215)	S																										X				
				250g Amber Jar (ALE210)	S				X		X								X						X				X						
				1kg TUB	S		X						X		X		X		X		X		X				X						X		X
20598417	WS01		1.80 - 1.80	60g VOC (ALE215)	S																									N					
				250g Amber Jar (ALE210)	S				X	N									X						X				X						
				1kg TUB	S							N		N																					
20598407	WS01		0.50 - 0.50	60g VOC (ALE215)	S																										X				
				250g Amber Jar (ALE210)	S				X		X								X						X				X						
				1kg TUB	S		X						X				X		X		X		X				X						X		X
20598388	WS01		0.30 - 0.30	60g VOC (ALE215)	S																										X				
				250g Amber Jar (ALE210)	S				X		X								X						X				X						
				1kg TUB	S		X						X				X		X		X		X				X						X		X
20598956	CPBR9		8.80 - 8.80	60g VOC (ALE215)	S																										X				
				250g Amber Jar (ALE210)	S				X		X								X						X				X						
				1kg TUB	S		X						X				X		X		X		X				X						X		X
20598946	CPBR9		4.20 - 4.20	60g VOC (ALE215)	S																										X				
				250g Amber Jar (ALE210)	S				X		X								X						X				X						
				1kg TUB	S		X						X				X		X		X		X				X						X		X
20598939	CPBR9		3.10 - 3.10	60g VOC (ALE215)	S																										X				
				250g Amber Jar (ALE210)	S				X		X								X						X				X						
				1kg TUB	S		X						X				X		X		X		X				X						X		X

Validated

CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

Results Legend

X Test

N No Determination Possible

Sample Types -

S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

Lab Sample No(s)			20598922	20598930			20598817			20598217			20598227			20598239			20598248		
Customer Sample Reference			CPBR3	CPBR3			CPBR3			CPBR4			CPBR4			CPBR4			CPBR4		
AGS Reference																					
Depth (m)			4.80 - 4.80	7.40 - 7.40			9.10 - 9.10			2.50 - 2.50			3.50 - 3.50			7.50 - 7.50			9.40 - 9.40		
Container			60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)
Sample Type			S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
Metals in solid samples by OES	All	NDPs: 1 Tests: 63			X			X			X			X			X			X		
PAH by GCMS	All	NDPs: 0 Tests: 64			X			X			X			X			X			X		
PAH Spec MS - Aqueous (W)	All	NDPs: 0 Tests: 54		X			X			X			X			X						
pH	All	NDPs: 0 Tests: 64			X			X			X			X			X			X		
pH Value	All	NDPs: 0 Tests: 54		X			X			X			X			X						
Phenols by HPLC (S)	All	NDPs: 0 Tests: 64			X			X			X			X			X			X		
Phenols by HPLC (W)	All	NDPs: 0 Tests: 54		X			X			X			X			X						
Sample description	All	NDPs: 0 Tests: 64			X			X			X			X			X			X		
Total Organic Carbon	All	NDPs: 1 Tests: 63			X			X			X			X			X			X		
Total Sulphate	All	NDPs: 1 Tests: 63			X			X			X			X			X			X		
Total Sulphur	All	NDPs: 1 Tests: 63			X			X			X			X			X			X		
TPH CWG (W)	All	NDPs: 0 Tests: 54		X			X			X			X			X						
TPH CWG GC (S)	All	NDPs: 1 Tests: 63			X			X			X			X			X			X		
VOC MS (S)	All	NDPs: 1 Tests: 63	X			X			X			X			X			X				X

20598362	WS04		0.30 - 0.30	60g VOC (ALE215)	S																		X
				250g Amber Jar (ALE210)	S		X		X			X			X			X		X			X	
				1kg TUB	S					X			X			X						X		
20598417	WS01		1.80 - 1.80	60g VOC (ALE215)	S																		N	
				250g Amber Jar (ALE210)	S	N			X			X			X			X	N		N		N			
				1kg TUB	S																			
20598407	WS01		0.50 - 0.50	60g VOC (ALE215)	S																		X
				250g Amber Jar (ALE210)	S		X		X			X			X			X		X			X	
				1kg TUB	S					X			X			X						X		
20598388	WS01		0.30 - 0.30	60g VOC (ALE215)	S																		X
				250g Amber Jar (ALE210)	S		X		X			X			X			X		X			X	
				1kg TUB	S					X			X			X						X		
20598956	CPBR9		8.80 - 8.80	60g VOC (ALE215)	S																		X
				250g Amber Jar (ALE210)	S		X		X			X			X			X		X			X	
				1kg TUB	S					X			X			X						X		
20598946	CPBR9		4.20 - 4.20	60g VOC (ALE215)	S																		X
				250g Amber Jar (ALE210)	S		X		X			X			X			X		X			X	
				1kg TUB	S					X			X			X						X		
20598939	CPBR9		3.10 - 3.10	60g VOC (ALE215)	S																		X
				250g Amber Jar (ALE210)	S		X		X			X			X			X		X			X	
				1kg TUB	S					X			X			X						X		

Validated

CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

Results Legend

X Test

N No Determination Possible

Sample Types -

S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

Lab Sample No(s)			20598372			20598505			20598264			20598278			20598286			20598295		20598310
Customer Sample Reference			WS04			WS04			WS13			WS13			WS13			WS13		WS19
AGS Reference																				
Depth (m)			1.00 - 1.00			3.40 - 3.80			0.30 - 0.30			0.50 - 0.50			1.00 - 1.00			1.80 - 1.80		0.30 - 0.30
Container			1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB
Sample Type			S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
Ammonium Low	All	NDPs: 0 Tests: 54	X			X			X			X									X
Ammonium Soil by Titration	All	NDPs: 0 Tests: 64		X			X			X			X			X			X		
Anions by Kone (soil)	All	NDPs: 3 Tests: 61		X			X			X			X			X			X		
Asbestos ID in Solid Samples	All	NDPs: 1 Tests: 63	X			X			X			X			X			X			X
CEN Readings	All	NDPs: 0 Tests: 54	X			X			X			X									X
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 118	X	X		X	X		X	X		X	X			X			X		X
Dissolved Metals by ICP-MS	All	NDPs: 0 Tests: 54	X			X			X			X									X
EPH CWG (Aliphatic) Aqueous GC (W)	All	NDPs: 0 Tests: 54	X			X			X			X									X
EPH CWG (Aliphatic) GC (S)	All	NDPs: 0 Tests: 64		X			X			X			X			X			X		
EPH CWG (Aromatic) Aqueous GC (W)	All	NDPs: 0 Tests: 54	X			X			X			X									X
EPH CWG (Aromatic) GC (S)	All	NDPs: 0 Tests: 64		X			X			X			X			X			X		
GRO by GC-FID (S)	All	NDPs: 1 Tests: 63			X			X			X			X			X			X	
GRO by GC-FID (W)	All	NDPs: 0 Tests: 54	X			X			X			X									X
Mercury Dissolved	All	NDPs: 0 Tests: 54	X			X			X			X									X
Metals in solid samples by OES	All	NDPs: 1 Tests: 63		X			X			X			X			X			X		

20598682	WSBP105		0.30 - 0.30	1kg TUB	S	X			X	X	X	X	X		X			X	X	
20598613	WSBP104		1.80 - 1.80	60g VOC (ALE215)	S												X			
				250g Amber Jar (ALE210)	S		X	X			X			X		X				X
				1kg TUB	S	X			X	X	X	X	X		X			X	X	
20598597	WSBP104		1.00 - 1.00	60g VOC (ALE215)	S												X			
				250g Amber Jar (ALE210)	S		X	X			X			X		X				X
				1kg TUB	S	X			X	X	X	X	X		X			X	X	
20598585	WSBP104		0.30 - 0.30	60g VOC (ALE215)	S												X			
				250g Amber Jar (ALE210)	S		X	X			X			X		X				X
				1kg TUB	S	X			X	X	X	X	X		X			X	X	
20598518	WS20		1.80 - 1.80	60g VOC (ALE215)	S												X			
				250g Amber Jar (ALE210)	S		X	X			X			X		X				X
				1kg TUB	S				X											
20598351	WS19		1.80 - 1.80	60g VOC (ALE215)	S												X			
				250g Amber Jar (ALE210)	S		X	X			X			X		X				X
				1kg TUB	S				X											
20598327	WS19		1.00 - 1.00	60g VOC (ALE215)	S												X			
				250g Amber Jar (ALE210)	S		X	X			X			X		X				X
				1kg TUB	S	X			X	X	X	X	X		X			X	X	
20598310	WS19		0.30 - 0.30	60g VOC (ALE215)	S												X			
				250g Amber Jar (ALE210)	S		X	X			X			X		X				X

CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

Results Legend

X Test

N No Determination Possible

Sample Types -

S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

Lab Sample No(s)			20598372			20598505			20598264			20598278			20598286			20598295			20598310
Customer Sample Reference			WS04			WS04			WS13			WS13			WS13			WS13			WS19
AGS Reference																					
Depth (m)			1.00 - 1.00			3.40 - 3.80			0.30 - 0.30			0.50 - 0.50			1.00 - 1.00			1.80 - 1.80			0.30 - 0.30
Container			1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB
Sample Type			S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
PAH by GCMS	All	NDPs: 0 Tests: 64		X			X			X			X			X			X		
PAH Spec MS - Aqueous (W)	All	NDPs: 0 Tests: 54	X			X			X			X									X
pH	All	NDPs: 0 Tests: 64		X			X			X			X			X			X		
pH Value	All	NDPs: 0 Tests: 54	X			X			X			X									X
Phenols by HPLC (S)	All	NDPs: 0 Tests: 64		X			X			X			X			X			X		
Phenols by HPLC (W)	All	NDPs: 0 Tests: 54	X			X			X			X									X
Sample description	All	NDPs: 0 Tests: 64		X			X			X			X			X			X		
Total Organic Carbon	All	NDPs: 1 Tests: 63		X			X			X			X			X			X		
Total Sulphate	All	NDPs: 1 Tests: 63		X			X			X			X			X			X		
Total Sulphur	All	NDPs: 1 Tests: 63		X			X			X			X			X			X		
TPH CWG (W)	All	NDPs: 0 Tests: 54	X			X			X			X									X
TPH CWG GC (S)	All	NDPs: 1 Tests: 63		X			X			X			X			X			X		
VOC MS (S)	All	NDPs: 1 Tests: 63			X			X			X			X			X			X	

20598682	WSBP105		0.30 - 0.30	1kg TUB	S		x		x		x						x		
20598613	WSBP104		1.80 - 1.80	60g VOC (ALE215)	S														x
				250g Amber Jar (ALE210)	S	x		x		x		x	x	x	x		x		
				1kg TUB	S		x		x		x						x		
20598597	WSBP104		1.00 - 1.00	60g VOC (ALE215)	S														x
				250g Amber Jar (ALE210)	S	x		x		x		x	x	x	x		x		
				1kg TUB	S		x		x		x						x		
20598585	WSBP104		0.30 - 0.30	60g VOC (ALE215)	S														x
				250g Amber Jar (ALE210)	S	x		x		x		x	x	x	x		x		
				1kg TUB	S		x		x		x						x		
20598518	WS20		1.80 - 1.80	60g VOC (ALE215)	S														x
				250g Amber Jar (ALE210)	S	x		x		x		x	x	x	x		x		
				1kg TUB	S														
20598351	WS19		1.80 - 1.80	60g VOC (ALE215)	S														x
				250g Amber Jar (ALE210)	S	x		x		x		x	x	x	x		x		
				1kg TUB	S														
20598327	WS19		1.00 - 1.00	60g VOC (ALE215)	S														x
				250g Amber Jar (ALE210)	S	x		x		x		x	x	x	x		x		
				1kg TUB	S		x		x		x						x		
20598310	WS19		0.30 - 0.30	60g VOC (ALE215)	S														x
				250g Amber Jar (ALE210)	S	x		x		x		x	x	x	x		x		

Validated

CERTIFICATE OF ANALYSIS

SDG: 190828-36 **Client Reference:** **Report Number:** 522548
Location: Llanwern **Order Number:** LLA654 **Superseded Report:** 521395

Results Legend

X Test

N No Determination Possible

Sample Types -
S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

			Lab Sample No(s)	Customer Sample Reference	AGS Reference	Depth (m)	Container	Sample Type
			20598682	WSBP105		0.30 - 0.30	250g Amber Jar (ALE210)	S
							60g VOC (ALE215)	S
			20598696	WSBP105		1.00 - 1.00	1kg TUB	S
							250g Amber Jar (ALE210)	S
							60g VOC (ALE215)	S
			20598707	WSBP105		1.40 - 1.40	1kg TUB	S
							250g Amber Jar (ALE210)	S
							60g VOC (ALE215)	S
			20598541	WSBP108		0.30 - 0.30	1kg TUB	S
							250g Amber Jar (ALE210)	S
							60g VOC (ALE215)	S
			20598552	WSBP108		1.00 - 1.00	1kg TUB	S
							250g Amber Jar (ALE210)	S
							60g VOC (ALE215)	S
			20598565	WSBP108		1.50 - 1.50	1kg TUB	S
							250g Amber Jar (ALE210)	S
							60g VOC (ALE215)	S
			20598757	WSBP108		2.10 - 2.50	1kg TUB	S
							250g Amber Jar (ALE210)	S
Ammonium Low	All	NDPs: 0 Tests: 54						
				X				
				X				
				X				
Ammonium Soil by Titration	All	NDPs: 0 Tests: 64						
			X					
				X				
				X				
				X				
Anions by Kone (soil)	All	NDPs: 3 Tests: 61						
			X					
				X				
				X				
				X				
Asbestos ID in Solid Samples	All	NDPs: 1 Tests: 63						
				X				
						X		
				X				
				X				
CEN Readings	All	NDPs: 0 Tests: 54						
				X				
				X				
				X				
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 118						
			X					
				X				
				X				
				X				
				X				
Dissolved Metals by ICP-MS	All	NDPs: 0 Tests: 54						
				X				
				X				
				X				
EPH CWG (Aliphatic) Aqueous GC (W)	All	NDPs: 0 Tests: 54						
				X				
				X				
				X				
EPH CWG (Aliphatic) GC (S)	All	NDPs: 0 Tests: 64						
			X					
				X				
				X				
				X				
EPH CWG (Aromatic) Aqueous GC (W)	All	NDPs: 0 Tests: 54						
				X				
				X				
				X				
EPH CWG (Aromatic) GC (S)	All	NDPs: 0 Tests: 64						
			X					
				X				
				X				
				X				
GRO by GC-FID (S)	All	NDPs: 1 Tests: 63						
				X				
						X		
				X				
				X				
GRO by GC-FID (W)	All	NDPs: 0 Tests: 54						
				X				
				X				
				X				
Mercury Dissolved	All	NDPs: 0 Tests: 54						
				X				
				X				
				X				
Metals in solid samples by OES	All	NDPs: 1 Tests: 63						
			X					
				X				
				X				
				X				

20598871	WSBP109		1.60 - 1.60	60g VOC (ALE215)	S														x			
				250g Amber Jar (ALE210)	S		x		x				x				x							x
				1kg TUB	S						x													
20598767	WSBP109		1.00 - 1.00	60g VOC (ALE215)	S														x			
				250g Amber Jar (ALE210)	S		x		x				x				x							x
				1kg TUB	S	x				x		x		x		x					x		x	
20598625	WSBP109		0.30 - 0.30	60g VOC (ALE215)	S														x			
				250g Amber Jar (ALE210)	S		x		x				x				x							x
				1kg TUB	S	x				x		x		x		x					x		x	
20598778	WSBP108		3.40 - 4.00	60g VOC (ALE215)	S														x			
				250g Amber Jar (ALE210)	S		x		x				x				x							x
				1kg TUB	S	x				x		x		x		x					x		x	
20598757	WSBP108		2.10 - 2.50	60g VOC (ALE215)	S														x			

Validated

CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

Results Legend

X Test

N No Determination Possible

Sample Types -

S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

Lab Sample No(s)			20598682		20598696			20598707			20598541			20598552			20598565			20598757	
Customer Sample Reference			WSBP105		WSBP105			WSBP105			WSBP108			WSBP108			WSBP108			WSBP108	
AGS Reference																					
Depth (m)			0.30 - 0.30		1.00 - 1.00			1.40 - 1.40			0.30 - 0.30			1.00 - 1.00			1.50 - 1.50			2.10 - 2.50	
Container			250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)
Sample Type			S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
PAH by GCMS	All	NDPs: 0 Tests: 64	X			X			X			X			X			X			X	
PAH Spec MS - Aqueous (W)	All	NDPs: 0 Tests: 54			X						X			X						X	
pH	All	NDPs: 0 Tests: 64	X			X			X			X			X			X			X	
pH Value	All	NDPs: 0 Tests: 54			X						X			X						X	
Phenols by HPLC (S)	All	NDPs: 0 Tests: 64	X			X			X			X			X			X			X	
Phenols by HPLC (W)	All	NDPs: 0 Tests: 54			X						X			X						X	
Sample description	All	NDPs: 0 Tests: 64	X			X			X			X			X			X			X	
Total Organic Carbon	All	NDPs: 1 Tests: 63	X			X			X			X			X			X			X	
Total Sulphate	All	NDPs: 1 Tests: 63	X			X			X			X			X			X			X	
Total Sulphur	All	NDPs: 1 Tests: 63	X			X			X			X			X			X			X	
TPH CWG (W)	All	NDPs: 0 Tests: 54			X						X			X						X	
TPH CWG GC (S)	All	NDPs: 1 Tests: 63	X			X			X			X			X			X			X	
VOC MS (S)	All	NDPs: 1 Tests: 63		X			X			X			X			X			X			

20598871	WSBP109		1.60 - 1.60	60g VOC (ALE215)	S																X
				250g Amber Jar (ALE210)	S	X		X		X		X	X	X	X		X			
				1kg TUB	S																
20598767	WSBP109		1.00 - 1.00	60g VOC (ALE215)	S																X
				250g Amber Jar (ALE210)	S	X		X		X		X	X	X	X		X			
				1kg TUB	S		X		X		X						X				
20598625	WSBP109		0.30 - 0.30	60g VOC (ALE215)	S																X
				250g Amber Jar (ALE210)	S	X		X		X		X	X	X	X		X			
				1kg TUB	S		X		X		X						X				
20598778	WSBP108		3.40 - 4.00	60g VOC (ALE215)	S																X
				250g Amber Jar (ALE210)	S	X		X		X		X	X	X	X		X			
				1kg TUB	S		X		X		X						X				
20598757	WSBP108		2.10 - 2.50	60g VOC (ALE215)	S																X

CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

Sample Descriptions

Grain Sizes

very fine	<0.063mm	fine	0.063mm - 0.1mm	medium	0.1mm - 2mm	coarse	2mm - 10mm	very coarse	>10mm

Lab Sample No(s)	Customer Sample Ref.	Depth (m)	Colour	Description	Inclusions	Inclusions 2
20598637	BHCP105	0.30 - 0.30	Dark Brown	Loamy Sand	Stones	Crushed Brick
20598655	BHCP105	0.50 - 0.50	Dark Brown	Loamy Sand	Stones	Vegetation
20598666	BHCP105	1.00 - 1.00	Dark Brown	Loamy Sand	Stones	Vegetation
20598427	CPB5	8.70 - 8.70	Grey	Loamy Sand	Stones	Vegetation
20598438	CPB5	7.80 - 7.80	Black	Clay Loam	None	None
20598446	CPB5	4.00 - 4.00	Dark Brown	Sandy Silt Loam	Vegetation	None
20598824	CPB7	2.70 - 2.70	Dark Brown	Silt Loam	Stones	Vegetation
20598832	CPB7	4.70 - 4.70	Grey	Clay Loam	Stones	None
20598839	CPB7	6.60 - 6.60	Dark Brown	Sandy Silt Loam	Vegetation	Stones
20598847	CPB9	3.50 - 3.50	Dark Brown	Silty Clay	Vegetation	None
20598859	CPB9	6.50 - 6.50	Dark Brown	Loamy Sand	Vegetation	None
20598882	CPB9	7.60 - 7.60	Dark Brown	Silty Clay	None	None
20598896	CPB9	8.60 - 8.60	Grey	Loamy Sand	Stones	Concrete/Aggregate
20598788	CPB11	3.50 - 3.50	Black	Clay Loam	Stones	None
20598798	CPB11	5.50 - 5.50	Dark Brown	Clay Loam	None	None
20598808	CPB11	9.50 - 9.50	Grey	Sand	Stones	None
20598466	CPB13	4.20 - 4.20	Grey	Silt Loam	None	None
20598492	CPB13	2.20 - 2.20	Dark Brown	Silt Loam	Vegetation	None
20598531	CPB13	10.10 - 10.10	Dark Brown	Sandy Clay	Stones	None
20598207	CPB18	0.30 - 0.30	Dark Brown	Loamy Sand	Stones	None
20598340	CPB18	0.50 - 0.50	Black	Loamy Sand	Stones	Vegetation
20598478	CPB18	1.90 - 1.90	Dark Brown	Silty Clay Loam	Stones	Crushed Brick
20598715	CPBP101	0.30 - 0.30	Dark Brown	Loamy Sand	Stones	Vegetation
20598729	CPBP101	1.00 - 1.00	Dark Brown	Loamy Sand	Stones	Oil/Petroleum
20598741	CPBP101	1.50 - 1.50	Dark Brown	Loamy Sand	Stones	Oil/Petroleum
20598817	CPBR3	9.10 - 9.10	Light Brown	Sandy Loam	Stones	Vegetation
20598911	CPBR3	3.40 - 3.40	Dark Brown	Sandy Silt Loam	Vegetation	None
20598922	CPBR3	4.80 - 4.80	Dark Brown	Sandy Silt Loam	None	None
20598930	CPBR3	7.40 - 7.40	Dark Brown	Silt Loam	Vegetation	None
20598217	CPBR4	2.50 - 2.50	Dark Brown	Silt Loam	Vegetation	None
20598227	CPBR4	3.50 - 3.50	Dark Brown	Silt Loam	Vegetation	None
20598239	CPBR4	7.50 - 7.50	Black	Silt Loam	None	Vegetation
20598248	CPBR4	9.40 - 9.40	Dark Brown	Sand	None	None
20598939	CPBR9	3.10 - 3.10	Dark Brown	Sandy Silt Loam	Vegetation	None
20598946	CPBR9	4.20 - 4.20	Grey	Silt Loam	Vegetation	Stones
20598956	CPBR9	8.80 - 8.80	Dark Brown	Sand	Stones	None
20598388	WS01	0.30 - 0.30	Black	Loamy Sand	Stones	None
20598407	WS01	0.50 - 0.50	Black	Loamy Sand	Stones	None

CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

			Colour	Description	Inclusions	Inclusions 2
20598417	WS01	1.80 - 1.80	Black	N/A	Tar	Stones
20598362	WS04	0.30 - 0.30	Dark Brown	Silt Loam	Stones	None
20598372	WS04	1.00 - 1.00	Dark Brown	Sandy Silt Loam	Stones	None
20598505	WS04	3.40 - 3.80	Black	Silty Clay	None	None
20598264	WS13	0.30 - 0.30	Dark Brown	Sandy Loam	Stones	Vegetation
20598278	WS13	0.50 - 0.50	Dark Brown	Loamy Sand	Stones	Vegetation
20598286	WS13	1.00 - 1.00	Dark Brown	Stone/Soil	Stones	None
20598295	WS13	1.80 - 1.80	Dark Brown	Loamy Sand	Stones	Vegetation
20598310	WS19	0.30 - 0.30	Dark Brown	Sandy Silt Loam	Stones	Vegetation
20598327	WS19	1.00 - 1.00	Dark Brown	Sandy Silt Loam	Vegetation	Stones
20598351	WS19	1.80 - 1.80	Dark Brown	Sandy Silt Loam	Stones	Vegetation
20598518	WS20	1.80 - 1.80	Dark Brown	Clay	None	None
20598585	WSBP104	0.30 - 0.30	Dark Brown	Loamy Sand	Stones	Vegetation
20598597	WSBP104	1.00 - 1.00	Dark Brown	Stone/Soil	Stones	None
20598613	WSBP104	1.80 - 1.80	Dark Brown	Silt Loam	Vegetation	Oil/Petroleum
20598682	WSBP105	0.30 - 0.30	Dark Brown	Stone/Soil	Stones	None
20598696	WSBP105	1.00 - 1.00	Dark Brown	Stone/Soil	Stones	Vegetation
20598707	WSBP105	1.40 - 1.40	Dark Brown	Stone/Soil	Stones	None
20598541	WSBP108	0.30 - 0.30	Dark Brown	Loamy Sand	Stones	Vegetation
20598552	WSBP108	1.00 - 1.00	Dark Brown	Stone/Soil	Stones	None
20598565	WSBP108	1.50 - 1.50	Dark Brown	Silt Loam	Stones	Vegetation
20598757	WSBP108	2.10 - 2.50	Grey	Clay	None	None
20598778	WSBP108	3.40 - 4.00	Dark Brown	Loamy Sand	Vegetation	None
20598625	WSBP109	0.30 - 0.30	Dark Brown	Loamy Sand	Stones	Crushed Brick
20598767	WSBP109	1.00 - 1.00	Dark Brown	Stone/Soil	Crushed Brick	Oil/Petroleum
20598871	WSBP109	1.60 - 1.60	Grey	Clay Loam	Vegetation	Stones

These descriptions are only intended to act as a cross check if sample identities are questioned, and to provide a log of sample matrices with respect to MCERTS validation. They are not intended as full geological descriptions.

We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally ocurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample.

Other coarse granular materials such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

Validated

CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-3+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	BHCP105	BHCP105	BHCP105	CPB5	CPB5	CPB5
			Depth (m)	0.30 - 0.30	0.50 - 0.50	1.00 - 1.00	4.00 - 4.00	7.80 - 7.80	8.70 - 8.70
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	20/08/2019	20/08/2019	20/08/2019	22/08/2019	22/08/2019	22/08/2019
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	28/08/2019	28/08/2019	28/08/2019	28/08/2019	28/08/2019	28/08/2019
			SDG Ref	190828-36	190828-36	190828-36	190828-36	190828-36	190828-36
			Lab Sample No.(s)	20598637	20598655	20598666	20598446	20598438	20598427
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		8.9	11	8.1	36	54	10
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	<12 M	<12 M	<12 M	<12 M	<12 M
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 @ M	<0.01 @ M	<0.01 @ M	<0.01 M	<0.01 @ M	<0.01 M
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 @ M	<0.01 @ M	<0.01 @ M	<0.01 M	<0.01 @ M	<0.01 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 @ M	<0.015 @ M	<0.015 @ M	<0.015 M	<0.015 @ M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 @ M	<0.035 @ M	<0.035 @ M	<0.035 M	<0.035 @ M	<0.035 M
Sulphur, Total	<0.02 %	TM132		0.401	0.116	0.165	0.181	1.09	0.286
Sulphate, Total potential	<0.06 %	TM132		1.2	0.348	0.495	0.543	3.27	0.858
Soil Organic Matter (SOM)	<0.35 %	TM132		3.17 #	7.86 #	2.93 #	1.68 #	11.3 #	<0.35 #
pH	1 pH Units	TM133		9.75 M	9.57 M	9.67 M	7.97 M	7.37 M	8.41 M
Cyanide, Total	<1 mg/kg	TM153		<1 M	<1 M	<1 M	<1 M	<1 M	<1 M
Cyanide, Free	<1 mg/kg	TM153		<1 M	<1 M	<1 M	<1 M	<1 M	<1 M
Arsenic	<0.6 mg/kg	TM181		7.02 M	23.7 M	16 M	8.95 M	8.6 M	9.9 M
Cadmium	<0.02 mg/kg	TM181		0.619 M	<0.2 M	<0.2 M	<0.02 M	<0.02 M	0.0244 M
Chromium	<0.9 mg/kg	TM181		<9 M	<9 M	<9 M	20.6 M	15.6 M	1.94 M
Copper	<1.4 mg/kg	TM181		<14 M	65.5 M	45.3 M	9.29 M	9.76 M	2.89 M
Iron	<1000 mg/kg	TM181		86700 #	365000 #	253000 #	23200 #	25000 #	6840 #
Lead	<0.7 mg/kg	TM181		37 M	207 M	196 M	14.2 M	10.3 M	2.55 M
Manganese	<0.13 mg/kg	TM181		4430 M	9460 M	6530 M	637 M	403 M	416 M
Mercury	<0.14 mg/kg	TM181		<1.4 M	<1.4 M	<1.4 M	<0.14 M	<0.14 M	<0.14 M
Nickel	<0.2 mg/kg	TM181		13.9 M	10.6 M	13 M	26.2 M	21.2 M	4.5 M
Selenium	<1 mg/kg	TM181		<10 #	<10 #	<10 #	<1 #	<1 #	<1 #
Vanadium	<0.2 mg/kg	TM181		46 #	28.5 #	38.7 #	32.6 #	25.4 #	9.22 #
Zinc	<1.9 mg/kg	TM181		145 M	419 M	426 M	83.6 M	68.3 M	19.1 M
Sulphate, acid soluble (total)	<0.02 %	TM221		0.926	0.0704	0.235	0.047	0.17	0.1
Water Soluble Sulphate as SO4 2:1 Extract	<0.004 g/l	TM243		0.391 M	0.156 M	0.234 M	0.068 M	0.31 M	0.0403 M
Soluble Sulphate 2:1 extract as SO4 BRE	<0.004 g/l	TM243		0.391 M	0.156 M	0.234 M	0.068 M	0.31 M	0.0403 M

Validated

CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-3+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	CPB7	CPB7	CPB7	CPB9	CPB9	CPB9
			Depth (m)	2.70 - 2.70	4.70 - 4.70	6.60 - 6.60	3.50 - 3.50	6.50 - 6.50	7.60 - 7.60
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	21/08/2019	21/08/2019	21/08/2019	19/08/2019	19/08/2019	19/08/2019
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	28/08/2019	28/08/2019	28/08/2019	28/08/2019	28/08/2019	28/08/2019
			SDG Ref	190828-36	190828-36	190828-36	190828-36	190828-36	190828-36
			Lab Sample No.(s)	20598824	20598832	20598839	20598847	20598859	20598882
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		46	32	61	34	63	33
Exchangeable Ammonia as N	<12 mg/kg	TM024		171 M	463 M	350 M	85.8 M	90.3 M	56.1 M
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 @ M	<0.01 M	<0.01 @ M	<0.01 @ M	<0.01 @ M	<0.01 @ M
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 @ M	<0.01 M	<0.01 @ M	<0.01 @ M	<0.01 @ M	<0.01 @ M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 @ M	<0.015 M	0.286 @ M	<0.015 @ M	<0.015 @ M	<0.015 @ M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 @ M	<0.035 M	0.286 @ M	<0.035 @ M	<0.035 @ M	<0.035 @ M
Sulphur, Total	<0.02 %	TM132		1.34	1.12	2.89	0.273	2.55	0.781
Sulphate, Total potential	<0.06 %	TM132		4.02	3.36	8.67	0.819	7.65	2.34
Soil Organic Matter (SOM)	<0.35 %	TM132		20.3 #	2.31 #	20.5 #	5.47 #	33.8 #	3.33 #
pH	1 pH Units	TM133		8.5 M	8.39 M	7.5 M	8.99 M	6.82 M	7.98 M
Cyanide, Total	<1 mg/kg	TM153		1.58 M	<1 M	<1 M	3.07 @ M	<1 @ M	<1 M
Cyanide, Free	<1 mg/kg	TM153		<1 M	<1 M	<1 M	<1 @ M	<1 @ M	<1 M
Arsenic	<0.6 mg/kg	TM181		6.67 M	7.77 M	8.21 M	8.69 M	9.18 M	8.76 M
Cadmium	<0.02 mg/kg	TM181		0.454 M	<0.02 M	<0.02 M	<0.02 M	<0.02 M	<0.02 M
Chromium	<0.9 mg/kg	TM181		4.91 M	23.9 M	14.9 M	40.1 M	14.1 M	18.3 M
Copper	<1.4 mg/kg	TM181		9.28 M	10.3 M	17.9 M	28.8 M	15.1 M	9.56 M
Iron	<1000 mg/kg	TM181		31400 #	31000 #	24900 #	20800 #	19200 #	20100 #
Lead	<0.7 mg/kg	TM181		30.6 M	19.8 M	26 M	21.2 M	6.34 M	12.8 M
Manganese	<0.13 mg/kg	TM181		1290 M	1900 M	613 M	172 M	320 M	549 M
Mercury	<0.14 mg/kg	TM181		<0.14 M	<0.14 M	<0.14 M	<0.14 M	<0.14 M	<0.14 M
Nickel	<0.2 mg/kg	TM181		7.39 M	30.6 M	18.8 M	19.2 M	17.9 M	23.6 M
Selenium	<1 mg/kg	TM181		<1 #	<1 #	<1 #	1.03 #	1.92 #	<1 #
Vanadium	<0.2 mg/kg	TM181		17.9 #	36 #	34.3 #	61.4 #	24.1 #	28.6 #
Zinc	<1.9 mg/kg	TM181		335 M	112 M	82 M	47.1 M	39.6 M	72.8 M
Sulphate, acid soluble (total)	<0.02 %	TM221		0.593	0.139	0.545	0.0804	0.391	0.0953
Water Soluble Sulphate as SO4 2:1 Extract	<0.004 g/l	TM243		1.11 M	0.555 M	2.48 M			0.131 M
Soluble Sulphate 2:1 extract as SO4 BRE	<0.004 g/l	TM243		1.11 M	0.555 M	2.48 M			0.131 M

Validated

CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-3+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	CPB9	CPB11	CPB11	CPB11	CPB13	CPB13
			Depth (m)	8.60 - 8.60	3.50 - 3.50	5.50 - 5.50	9.50 - 9.50	10.10 - 10.10	2.20 - 2.20
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	19/08/2019	20/08/2019	20/08/2019	20/08/2019	22/08/2019	22/08/2019
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	28/08/2019	28/08/2019	28/08/2019	28/08/2019	28/08/2019	28/08/2019
			SDG Ref	190828-36	190828-36	190828-36	190828-36	190828-36	190828-36
			Lab Sample No.(s)	20598896	20598788	20598798	20598808	20598531	20598492
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		13	57	34	6.2	14	33
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	<12 M	38 M	<12 M	<12 M	39.6 M
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 @ M	<0.01 @ M	<0.01 M	<0.01 @ M	<0.01 M	<0.01 M
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 @ M	<0.01 @ M	<0.01 M	<0.01 @ M	<0.01 M	<0.01 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 @ M	<0.015 @ M	<0.015 M	<0.015 @ M	<0.015 M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 @ M	<0.035 @ M	<0.035 M	<0.035 @ M	<0.035 M	<0.035 M
Sulphur, Total	<0.02 %	TM132		0.104	1.4	0.371	0.0756	0.0552	1.2
Sulphate, Total potential	<0.06 %	TM132		0.312	4.2	1.11	0.227	0.166	3.6
Soil Organic Matter (SOM)	<0.35 %	TM132		<0.35 #	20 #	1.86 #	<0.35 #	0.712 #	2.59 #
pH	1 pH Units	TM133		8.99 M	8 M	8.63 M	8.2 M	8.17 M	7.91 M
Cyanide, Total	<1 mg/kg	TM153		<1 @ M	2.53 M	<1 M	<1 M	<1 M	<1 M
Cyanide, Free	<1 mg/kg	TM153		<1 @ M	<1 M	<1 M	<1 M	<1 M	<1 M
Arsenic	<0.6 mg/kg	TM181		6.29 M	9.03 M	9.37 M	8.75 M	6.05 M	9.57 M
Cadmium	<0.02 mg/kg	TM181		0.0257 M	<0.02 M	0.2 M	<0.02 M	0.254 M	<0.02 M
Chromium	<0.9 mg/kg	TM181		1.38 M	27.9 M	19.9 M	3.39 M	15.3 M	24.6 M
Copper	<1.4 mg/kg	TM181		<1.4 M	22.8 M	8.69 M	27.5 M	9.87 M	11 M
Iron	<1000 mg/kg	TM181		6210 #	20100 #	24200 #	6520 #	34200 #	19100 #
Lead	<0.7 mg/kg	TM181		2.43 M	15.3 M	12.5 M	1.42 M	16.3 M	18.3 M
Manganese	<0.13 mg/kg	TM181		297 M	223 M	522 M	783 M	804 M	684 M
Mercury	<0.14 mg/kg	TM181		<0.14 M	<0.14 M	<0.14 M	<0.14 M	<0.14 M	<0.14 M
Nickel	<0.2 mg/kg	TM181		3.6 M	17.9 M	24.5 M	3.79 M	24.5 M	31.6 M
Selenium	<1 mg/kg	TM181		<1 #	1.53 #	<1 #	<1 #	<1 #	<1 #
Vanadium	<0.2 mg/kg	TM181		6.54 #	44.8 #	31 #	5.35 #	21.5 #	36.2 #
Zinc	<1.9 mg/kg	TM181		16.7 M	48.4 M	75.5 M	9.89 M	71.4 M	98.7 M
Sulphate, acid soluble (total)	<0.02 %	TM221		0.079	0.157	0.0936	0.0359	0.0332	0.103
Water Soluble Sulphate as SO4 2:1 Extract	<0.004 g/l	TM243		0.0639 M	0.609 M	0.154 M	0.0184 M	0.0354 M	0.259 M
Soluble Sulphate 2:1 extract as SO4 BRE	<0.004 g/l	TM243		0.0639 M	0.609 M	0.154 M	0.0184 M	0.0354 M	0.259 M

Validated

CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-3+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	CPB13	CPB18	CPB18	CPB18	CPBP101	CPBP101
			Depth (m)	4.20 - 4.20	0.30 - 0.30	0.50 - 0.50	1.90 - 1.90	0.30 - 0.30	1.00 - 1.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	22/08/2019	21/08/2019	21/08/2019	21/08/2019	20/08/2019	20/08/2019
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	28/08/2019	28/08/2019	28/08/2019	28/08/2019	28/08/2019	28/08/2019
			SDG Ref	190828-36	190828-36	190828-36	190828-36	190828-36	190828-36
			Lab Sample No.(s)	20598466	20598207	20598340	20598478	20598715	20598729
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		34	18	20	25	5.9	9.3
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	<12 M	<12 M	59.6 M	<12 M	<12 M
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 M	0.0121 M	<0.01 M	<0.01 @ M	<0.01 @ M	0.022 @ M
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 M	0.0121 M	0.0125 M	<0.01 @ M	<0.01 @ M	0.033 @ M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M	<0.015 M	<0.015 @ M	<0.015 @ M	<0.015 @ M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 M	<0.035 M	<0.035 @ M	<0.035 @ M	0.055 @ M
Sulphur, Total	<0.02 %	TM132		1.57	0.506	0.487	0.234	0.724	0.619
Sulphate, Total potential	<0.06 %	TM132		4.71	1.52	1.46	0.702	2.17	1.86
Soil Organic Matter (SOM)	<0.35 %	TM132		2.1 #	39.1 #	76.9 #	10.8 #	7.6 #	8.76 #
pH	1 pH Units	TM133		8.35 M	10.1 M	8.91 M	8 M	11.4 M	12.1 M
Cyanide, Total	<1 mg/kg	TM153		<1 M	<1 M	<1 M	<1 M	<1 M	<1 M
Cyanide, Free	<1 mg/kg	TM153		<1 M	<1 M	<1 M	<1 M	<1 M	<1 M
Arsenic	<0.6 mg/kg	TM181		11.2 M	8.29 M	5.75 M	13 M	16.2 M	<6 M
Cadmium	<0.02 mg/kg	TM181		0.252 M	0.601 M	<0.02 M	1.37 M	<0.02 M	1.15 M
Chromium	<0.9 mg/kg	TM181		22.3 M	51.1 M	28.4 M	63 M	46.7 M	267 M
Copper	<1.4 mg/kg	TM181		10.1 M	10.3 M	11.5 M	20.4 M	7.67 M	14.4 M
Iron	<1000 mg/kg	TM181		32100 #	62400 #	34300 #	49400 #	58900 #	144000 #
Lead	<0.7 mg/kg	TM181		16.5 M	29.7 M	24.7 M	42.5 M	25.6 M	57.8 M
Manganese	<0.13 mg/kg	TM181		1180 M	7160 M	2400 M	6220 M	8860 M	21400 M
Mercury	<0.14 mg/kg	TM181		<0.14 M	<0.14 M	<0.14 M	<0.14 M	<0.14 M	<1.4 M
Nickel	<0.2 mg/kg	TM181		31.6 M	9.04 M	8.08 M	24.3 M	9.58 M	9.03 M
Selenium	<1 mg/kg	TM181		<1 #	2.75 #	1.17 #	2.26 #	3.06 #	<10 #
Vanadium	<0.2 mg/kg	TM181		34.7 #	60.4 #	35.4 #	92 #	140 #	317 #
Zinc	<1.9 mg/kg	TM181		96.5 M	104 M	71.8 M	119 M	124 M	132 M
Sulphate, acid soluble (total)	<0.02 %	TM221		0.0887	0.587	0.202	0.184	1.02	0.823
Water Soluble Sulphate as SO4 2:1 Extract	<0.004 g/l	TM243		0.26 M	0.289 M	0.227 M	0.357 M	0.636 M	0.147 M
Soluble Sulphate 2:1 extract as SO4 BRE	<0.004 g/l	TM243		0.26 M	0.289 M	0.227 M	0.357 M	0.636 M	0.147 M
Asbestos Quantification - Gravimetric - %	<0.001 %	TM304					<0.001 #		0.0016 #
Asbestos Quantification - PCOM Evaluation - %	<0.001 %	TM304					<0.001 #		<0.001 #
Additional Asbestos Components (Using TM048)		TM304					None #		None #
Analysts Comments		TM304					0		Fibres typical of Amph
Asbestos Quantification - Total - %	<0.001 %	TM304					<0.001 #		0.0022 #

Validated

CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-3+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	CPBP101	CPBR3	CPBR3	CPBR3	CPBR3	CPBR4
			Depth (m)	1.50 - 1.50	3.40 - 3.40	4.80 - 4.80	7.40 - 7.40	9.10 - 9.10	2.50 - 2.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	20/08/2019	20/08/2019	20/08/2019	20/08/2019	20/08/2019	21/08/2019
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	28/08/2019	28/08/2019	28/08/2019	28/08/2019	28/08/2019	28/08/2019
			SDG Ref	190828-36	190828-36	190828-36	190828-36	190828-36	190828-36
			Lab Sample No.(s)	20598741	20598911	20598922	20598930	20598817	20598217
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		6.7	54	69	57	11	41
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	<12 M	124 M	63.9 M	<12 M	540 M
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 @ M	<0.01 @ M	<0.01 @ M	<0.01 @ M	<0.01 @ M	<0.01 M
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 @ M	<0.01 @ M	<0.01 @ M	<0.01 @ M	<0.01 @ M	<0.01 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 @ M	<0.015 @ M	<0.015 @ M	<0.015 @ M	<0.015 @ M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 @ M	<0.035 @ M	<0.035 @ M	<0.035 @ M	<0.035 @ M	<0.035 M
Sulphur, Total	<0.02 %	TM132		0.224	1.11	2.46	1.44	0.0472	0.229
Sulphate, Total potential	<0.06 %	TM132		0.672	3.33	7.38	4.32	0.142	0.687
Soil Organic Matter (SOM)	<0.35 %	TM132		4.83 #	36 #	40.9 #	12.2 #	<0.35 #	11.1 #
pH	1 pH Units	TM133		12 M	8.41 M	8.34 M	6.31 M	8.7 M	7.15 M
Cyanide, Total	<1 mg/kg	TM153		<1 M	<1 @ M	<1 @ M	<1 @ M	<1 @ M	9.18 M
Cyanide, Free	<1 mg/kg	TM153		<1 M	<1 @ M	<1 @ M	<1 @ M	<1 @ M	<1 M
Arsenic	<0.6 mg/kg	TM181		<6 M	8 M	9.5 M	10.1 M	4.66 M	12.9 M
Cadmium	<0.02 mg/kg	TM181		1.59 M	<0.02 M	<0.02 M	<0.02 M	<0.02 M	<0.02 M
Chromium	<0.9 mg/kg	TM181		77.7 M	109 M	42.6 M	24.4 M	7.17 M	35.1 M
Copper	<1.4 mg/kg	TM181		14 M	13.6 M	17.3 M	10.1 M	7.7 M	14.3 M
Iron	<1000 mg/kg	TM181		180000 #	41800 #	22300 #	20100 #	14600 #	20300 #
Lead	<0.7 mg/kg	TM181		62.9 M	11.1 M	10.2 M	10.8 M	6.26 M	19.4 M
Manganese	<0.13 mg/kg	TM181		10700 M	8240 M	2040 M	1080 M	361 M	244 M
Mercury	<0.14 mg/kg	TM181		<1.4 M	<0.14 M	<0.14 M	<0.14 M	<0.14 M	<0.14 M
Nickel	<0.2 mg/kg	TM181		8.96 M	10.6 M	13.9 M	20.1 M	13.2 M	29.4 M
Selenium	<1 mg/kg	TM181		<10 #	4.49 #	2.17 #	<1 #	<1 #	<1 #
Vanadium	<0.2 mg/kg	TM181		145 #	161 #	68.3 #	40.6 #	12.9 #	49.9 #
Zinc	<1.9 mg/kg	TM181		138 M	37.1 M	36.5 M	63.4 M	35 M	60.8 M
Sulphate, acid soluble (total)	<0.02 %	TM221		0.317	0.335	0.342	0.351	0.021	0.113
Water Soluble Sulphate as SO4 2:1 Extract	<0.004 g/l	TM243		0.109 M	0.578 M	0.997 M	0.967 M	0.0203 M	0.115 M
Soluble Sulphate 2:1 extract as SO4 BRE	<0.004 g/l	TM243		0.109 M	0.578 M	0.997 M	0.967 M	0.0203 M	0.115 M

Validated

CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-3+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	CPBR4	CPBR4	CPBR4	CPBR9	CPBR9	CPBR9
			Depth (m)	3.50 - 3.50	7.50 - 7.50	9.40 - 9.40	3.10 - 3.10	4.20 - 4.20	8.80 - 8.80
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	21/08/2019	21/08/2019	21/08/2019	21/08/2019	21/08/2019	21/08/2019
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	28/08/2019	28/08/2019	28/08/2019	28/08/2019	28/08/2019	28/08/2019
			SDG Ref	190828-36	190828-36	190828-36	190828-36	190828-36	190828-36
			Lab Sample No.(s)	20598227	20598239	20598248	20598939	20598946	20598956
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		71	68	29	64	37	23
Exchangeable Ammonia as N	<12 mg/kg	TM024		199 M	42.3 M	<12 M	<12 M	34.7 M	<12 M
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 @ M	<0.01 @ M	<0.01 @ M	<0.01 @ M	<0.01 @ M
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 @ M	<0.01 @ M	<0.01 @ M	<0.01 @ M	<0.01 @ M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 @ M	<0.015 @ M	<0.015 @ M	<0.015 @ M	<0.015 @ M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 @ M	<0.035 @ M	<0.035 @ M	<0.035 @ M	<0.035 @ M
Sulphur, Total	<0.02 %	TM132		3.13	1.33	0.209	2.52	1.58	0.403
Sulphate, Total potential	<0.06 %	TM132		9.39	3.99	0.627	7.56	4.74	1.21
Soil Organic Matter (SOM)	<0.35 %	TM132		44.1 #	26.4 #	0.431 #	39.7 #	3.31 #	0.779 #
pH	1 pH Units	TM133		6.18 M	7.43 M	8.3 M	7.62 M	8.04 M	8.53 M
Cyanide, Total	<1 mg/kg	TM153		2.69 M	<1 @ M	<1 @ M	<1 @ M	<1 @ M	<1 @ M
Cyanide, Free	<1 mg/kg	TM153		<1 M	<1 @ M	<1 @ M	<1 @ M	<1 @ M	<1 @ M
Arsenic	<0.6 mg/kg	TM181		8.35 M	8.88 M	5.46 M	11.2 M	7.02 M	7.69 M
Cadmium	<0.02 mg/kg	TM181		<0.02 M	<0.02 M	<0.02 M	0.0398 M	<0.02 M	0.12 M
Chromium	<0.9 mg/kg	TM181		62.1 M	13.3 M	5.26 M	17.1 M	21.2 M	4.59 M
Copper	<1.4 mg/kg	TM181		20.3 M	11.8 M	3.28 M	19.7 M	8.65 M	2.9 M
Iron	<1000 mg/kg	TM181		25500 #	24300 #	9110 #	22300 #	22100 #	9680 #
Lead	<0.7 mg/kg	TM181		9.79 M	10.9 M	4.83 M	25.3 M	19.3 M	6.96 M
Manganese	<0.13 mg/kg	TM181		2830 M	503 M	258 M	321 M	412 M	257 M
Mercury	<0.14 mg/kg	TM181		<0.14 M	<0.14 M	<0.14 M	<0.14 M	<0.14 M	<0.14 M
Nickel	<0.2 mg/kg	TM181		19.5 M	18.7 M	8.34 M	18.3 M	33.8 M	6.67 M
Selenium	<1 mg/kg	TM181		4.29 #	<1 #	<1 #	1.72 #	<1 #	<1 #
Vanadium	<0.2 mg/kg	TM181		83.2 #	23.5 #	11.3 #	35.4 #	34.1 #	10.4 #
Zinc	<1.9 mg/kg	TM181		32.7 M	66.9 M	25.5 M	74.3 M	94.4 M	27.2 M
Sulphate, acid soluble (total)	<0.02 %	TM221		0.572	0.177	0.0615	0.451	0.109	0.122
Water Soluble Sulphate as SO4 2:1 Extract	<0.004 g/l	TM243		1.02 M	0.371 M	0.0407 M	0.799 M	0.333 M	0.0659 M
Soluble Sulphate 2:1 extract as SO4 BRE	<0.004 g/l	TM243		1.02 M	0.371 M	0.0407 M	0.799 M	0.333 M	0.0659 M

Validated

CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-3+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	WS01	WS01	WS01	WS04	WS04	WS04
			Depth (m)	0.30 - 0.30	0.50 - 0.50	1.80 - 1.80	0.30 - 0.30	1.00 - 1.00	3.40 - 3.80
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	22/08/2019	22/08/2019	22/08/2019	22/08/2019	22/08/2019	22/08/2019
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	28/08/2019	28/08/2019	28/08/2019	28/08/2019	28/08/2019	28/08/2019
			SDG Ref	190828-36	190828-36	190828-36	190828-36	190828-36	190828-36
			Lab Sample No.(s)	20598388	20598407	20598417	20598362	20598372	20598505
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		9.9	13	0	9.2	12	76
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	<12 M	<12	<12 M	261 M	170 M
Phenol	<0.01 mg/kg	TM062 (S)		0.0222 M	0.0115 M	<0.2	<0.01 M	0.0912 @ M	<0.01 M
Cresols	<0.01 mg/kg	TM062 (S)		0.0444 M	0.0345 M	0.66	<0.01 M	0.194 @ M	<0.01 M
Xylenols	<0.015 mg/kg	TM062 (S)		0.0222 M	0.023 M	1.16	<0.015 M	<0.075 @ M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		0.0888 M	0.069 M	1.82	<0.035 M	0.285 @ M	<0.035 M
Sulphur, Total	<0.02 %	TM132		0.405	0.379		0.286	0.278	3.12
Sulphate, Total potential	<0.06 %	TM132		1.22	1.14		0.858	0.834	9.36
Soil Organic Matter (SOM)	<0.35 %	TM132		37.2 #	46.9 #		5.38 #	5.9 #	57.6 #
pH	1 pH Units	TM133		11 M	11.4 M	7.39	10.6 M	9.21 M	6.81 M
Cyanide, Total	<1 mg/kg	TM153		11.7 M	3.88 M	<1	<1 M	297 M	<1 M
Cyanide, Free	<1 mg/kg	TM153		<1 M	<1 M	<1	<1 M	1.23 M	<1 M
Arsenic	<0.6 mg/kg	TM181		5.64 M	5.33 M		12.3 M	8.9 M	5.01 M
Cadmium	<0.02 mg/kg	TM181		<0.02 M	0.0365 M		<0.02 M	0.0486 M	<0.02 M
Chromium	<0.9 mg/kg	TM181		91.6 M	58.1 M		211 M	34.4 M	38.8 M
Copper	<1.4 mg/kg	TM181		9.59 M	11 M		31.4 M	21.6 M	12.2 M
Iron	<1000 mg/kg	TM181		63100 #	23000 #		76700 #	34900 #	16700 #
Lead	<0.7 mg/kg	TM181		12.8 M	22.2 M		60.9 M	39.6 M	5.17 M
Manganese	<0.13 mg/kg	TM181		8680 M	3000 M		11800 M	2680 M	2110 M
Mercury	<0.14 mg/kg	TM181		<0.14 M	<0.14 M		<0.14 M	<0.14 M	<0.14 M
Nickel	<0.2 mg/kg	TM181		7.58 M	10.1 M		17.1 M	20.4 M	13.7 M
Selenium	<1 mg/kg	TM181		3.36 #	1.93 #		4.92 #	<1 #	3.99 #
Vanadium	<0.2 mg/kg	TM181		165 #	62.7 #		139 #	55.9 #	57.6 #
Zinc	<1.9 mg/kg	TM181		55.6 M	108 M		230 M	181 M	23.5 M
Sulphate, acid soluble (total)	<0.02 %	TM221		0.525	0.241		0.383	0.216	0.365
Water Soluble Sulphate as SO4 2:1 Extract	<0.004 g/l	TM243		0.0914 M	0.152 M		0.218 M	0.219 M	0.508 M
Soluble Sulphate 2:1 extract as SO4 BRE	<0.004 g/l	TM243		0.0914 M	0.152 M		0.218 M	0.219 M	0.508 M
Asbestos Quantification - Gravimetric - %	<0.001 %	TM304					0.0093 #		
Asbestos Quantification - PCOM Evaluation - %	<0.001 %	TM304					<0.001 #		
Additional Asbestos Components (Using TM048)		TM304					None #		
Analysts Comments		TM304					N/C		
Asbestos Quantification - Total - %	<0.001 %	TM304					0.0094 #		

Validated

CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-3+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	WS13	WS13	WS13	WS13	WS19	WS19
			Depth (m)	0.30 - 0.30	0.50 - 0.50	1.00 - 1.00	1.80 - 1.80	0.30 - 0.30	1.00 - 1.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	22/08/2019	22/08/2019	22/08/2019	22/08/2019	22/08/2019	22/08/2019
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	28/08/2019	28/08/2019	28/08/2019	28/08/2019	28/08/2019	28/08/2019
			SDG Ref	190828-36	190828-36	190828-36	190828-36	190828-36	190828-36
			Lab Sample No.(s)	20598264	20598278	20598286	20598295	20598310	20598327
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		11	12	14	50	6.3	9.3
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	<12 M	<12 #	1720 M	13 M	<12 M
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 @ M	<0.01 @ M	0.0116 @ #	<0.01 @ M	<0.01 @ M	<0.01 M
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 @ M	<0.01 @ M	<0.01 @ #	<0.01 @ M	<0.01 @ M	<0.01 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 @ M	<0.015 @ M	<0.015 @ #	<0.015 @ M	<0.015 @ M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 @ M	<0.035 @ M	<0.035 @ #	<0.035 @ M	<0.035 @ M	<0.035 M
Sulphur, Total	<0.02 %	TM132		0.214	0.356	0.45	1.55	0.362	0.314
Sulphate, Total potential	<0.06 %	TM132		0.642	1.07	1.35	4.65	1.09	0.942
Soil Organic Matter (SOM)	<0.35 %	TM132		8.15 #	11.7 #	3.31 #	12.2 #	3.59 #	4.6 #
pH	1 pH Units	TM133		9.59 M	10.2 M	7.99 #	6.76 M	8.44 M	8.4 M
Cyanide, Total	<1 mg/kg	TM153		1.71 @ M	1.64 @ M	151 @ #	11.2 @ M	<1 M	1.87 M
Cyanide, Free	<1 mg/kg	TM153		<1 @ M	<1 @ M	<1 @ #	<1 @ M	<1 M	<1 M
Arsenic	<0.6 mg/kg	TM181		9.87 M	10 M	8.5 #	35.8 M	7.37 M	7.01 M
Cadmium	<0.02 mg/kg	TM181		0.383 M	0.207 M	<0.02 #	0.405 M	<0.02 M	0.185 M
Chromium	<0.9 mg/kg	TM181		16.1 M	24 M	11.1 #	16.2 M	20.4 M	25.1 M
Copper	<1.4 mg/kg	TM181		19.4 M	21.6 M	10.5 #	18.2 M	7.28 M	19 M
Iron	<1000 mg/kg	TM181		20900 #	26800 #	27100 #	20100 #	17500 #	18800 #
Lead	<0.7 mg/kg	TM181		40.6 M	35.8 M	18.8 #	47.3 M	16.8 M	34.9 M
Manganese	<0.13 mg/kg	TM181		1320 M	1380 M	1790 #	466 M	4630 M	3520 M
Mercury	<0.14 mg/kg	TM181		<0.14 M	<0.14 M	1.47 #	<0.14 M	<0.14 M	<0.14 M
Nickel	<0.2 mg/kg	TM181		15.2 M	14 M	13.3 #	17.1 M	8.1 M	12.5 M
Selenium	<1 mg/kg	TM181		<1 #	<1 #	<1 #	<1 #	2.18 #	1.02 #
Vanadium	<0.2 mg/kg	TM181		30.6 #	22.7 #	26.9 #	44.4 #	41.9 #	41.8 #
Zinc	<1.9 mg/kg	TM181		111 M	127 M	74.4 #	120 M	56.5 M	72.8 M
Sulphate, acid soluble (total)	<0.02 %	TM221		0.427	0.557	0.337	0.516	0.16	0.29
Water Soluble Sulphate as SO4 2:1 Extract	<0.004 g/l	TM243		0.208 M	0.222 M	0.192 #	2.27 M	0.185 M	0.256 M
Soluble Sulphate 2:1 extract as SO4 BRE	<0.004 g/l	TM243		0.208 M	0.222 M	0.192 #	2.27 M	0.185 M	0.256 M

Validated

CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-3+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	WS19	WS20	WSBP104	WSBP104	WSBP104	WSBP105
			Depth (m)	1.80 - 1.80	1.80 - 1.80	0.30 - 0.30	1.00 - 1.00	1.80 - 1.80	0.30 - 0.30
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	22/08/2019	22/08/2019	20/08/2019	20/08/2019	20/08/2019	20/08/2019
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	28/08/2019	28/08/2019	28/08/2019	28/08/2019	28/08/2019	28/08/2019
			SDG Ref	190828-36	190828-36	190828-36	190828-36	190828-36	190828-36
			Lab Sample No.(s)	20598351	20598518	20598585	20598597	20598613	20598682
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		36	25	6.5	14	36	7.6
Exchangeable Ammonia as N	<12 mg/kg	TM024		255 M	221 M	<12 M	<12 #	195 M	<12 #
Phenol	<0.01 mg/kg	TM062 (S)		0.0155 M	0.0133 M	<0.01 M	<0.01 @ #	<0.01 @ M	<0.01 @ #
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 @ #	<0.01 @ M	<0.01 @ #
Xylenols	<0.015 mg/kg	TM062 (S)		0.031 M	<0.015 M	<0.015 M	<0.015 @ #	<0.015 @ M	<0.015 @ #
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 M	<0.035 M	<0.035 @ #	<0.035 @ M	<0.035 @ #
Sulphur, Total	<0.02 %	TM132		0.115	0.0258	0.16	0.476	0.432	0.206
Sulphate, Total potential	<0.06 %	TM132		0.345	0.0774	0.48	1.43	1.3	0.618
Soil Organic Matter (SOM)	<0.35 %	TM132		8.05 #	1.35 #	2.24 #	1.81 #	5.69 #	3.59 #
pH	1 pH Units	TM133		7.48 M	8.08 M	9.05 M	11.9 #	6.92 M	10.7 #
Cyanide, Total	<1 mg/kg	TM153		<1 M	<1 M	<1 @ M	2.78 @ #	<1 @ M	<1 @ #
Cyanide, Free	<1 mg/kg	TM153		<1 M	<1 M	<1 @ M	<1 @ #	<1 @ M	<1 @ #
Arsenic	<0.6 mg/kg	TM181		17.7 M	17.2 M	6.37 M	7.41 #	13.3 M	11.3 #
Cadmium	<0.02 mg/kg	TM181		0.13 M	0.29 M	<0.02 M	0.958 #	<0.02 M	<0.2 #
Chromium	<0.9 mg/kg	TM181		29.6 M	30.7 M	25.3 M	401 #	66.4 M	47.2 #
Copper	<1.4 mg/kg	TM181		67.9 M	10.2 M	9.05 M	14 #	15.8 M	19.7 #
Iron	<1000 mg/kg	TM181		26400 #	40500 #	61500 #	146000 #	34200 #	152000 #
Lead	<0.7 mg/kg	TM181		41 M	23.5 M	21.4 M	17.2 #	33.6 M	104 #
Manganese	<0.13 mg/kg	TM181		470 M	1340 M	3450 M	38900 #	4170 M	4840 #
Mercury	<0.14 mg/kg	TM181		<0.14 M	<0.14 M	<0.14 M	<0.14 #	<0.14 M	<1.4 #
Nickel	<0.2 mg/kg	TM181		25.7 M	33.5 M	11.6 M	9.44 #	22.3 M	16.7 #
Selenium	<1 mg/kg	TM181		<1 #	<1 #	<1 #	11.5 #	1.44 #	<10 #
Vanadium	<0.2 mg/kg	TM181		46.1 #	51.9 #	69.5 #	432 #	92.4 #	153 #
Zinc	<1.9 mg/kg	TM181		124 M	100 M	121 M	57.1 #	119 M	261 #
Sulphate, acid soluble (total)	<0.02 %	TM221		0.111	0.0229	0.136	0.636	0.265	0.19
Water Soluble Sulphate as SO4 2:1 Extract	<0.004 g/l	TM243		0.18 M	0.0602 M	0.0617 M	0.229 #	1.13 M	0.187 #
Soluble Sulphate 2:1 extract as SO4 BRE	<0.004 g/l	TM243		0.18 M	0.0602 M	0.0617 M	0.229 #	1.13 M	0.187 #

CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-3+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	WSBP105	WSBP105	WSBP108	WSBP108	WSBP108	WSBP108
			Depth (m)	1.00 - 1.00	1.40 - 1.40	0.30 - 0.30	1.00 - 1.00	1.50 - 1.50	2.10 - 2.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	20/08/2019	20/08/2019	20/08/2019	20/08/2019	20/08/2019	20/08/2019
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	28/08/2019	28/08/2019	28/08/2019	28/08/2019	28/08/2019	28/08/2019
			SDG Ref	190828-36	190828-36	190828-36	190828-36	190828-36	190828-36
			Lab Sample No.(s)	20598696	20598707	20598541	20598552	20598565	20598757
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		6.5	7.9	9	13	37	24
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 #	<12 #	<12 M	23.5 #	279 M	32.6 M
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 @ #	<0.01 @ #	<0.01 @ M	<0.01 @ #	<0.01 @ M	<0.01 M
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 @ #	<0.01 @ #	<0.01 @ M	<0.01 @ #	<0.01 @ M	<0.01 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 @ #	<0.015 @ #	<0.015 @ M	<0.015 @ #	<0.015 @ M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 @ #	<0.035 @ #	<0.035 @ M	<0.035 @ #	<0.035 @ M	<0.035 M
Sulphur, Total	<0.02 %	TM132		0.185	0.263	0.136	0.414	0.115	0.0538
Sulphate, Total potential	<0.06 %	TM132		0.555	0.789	0.408	1.24	0.345	0.161
Soil Organic Matter (SOM)	<0.35 %	TM132		3.24 #	6.22 #	3.1 #	4.47 #	6.33 #	1.01 #
pH	1 pH Units	TM133		11.1 #	10.6 #	8.82 M	7.62 #	7.11 M	8.21 M
Cyanide, Total	<1 mg/kg	TM153		<1 @ #	<1 @ #	8.14 @ M	<1 @ #	<1 @ M	<1 M
Cyanide, Free	<1 mg/kg	TM153		<1 @ #	<1 @ #	<1 @ M	<1 @ #	<1 @ M	<1 M
Arsenic	<0.6 mg/kg	TM181		8.24 #	11.8 #	12.3 M	8.97 #	13.9 M	11.6 M
Cadmium	<0.02 mg/kg	TM181		<0.02 #	1.77 #	0.0261 M	0.0875 #	0.0274 M	<0.02 M
Chromium	<0.9 mg/kg	TM181		<0.9 #	32 #	43.3 M	48.6 #	35.8 M	24.2 M
Copper	<1.4 mg/kg	TM181		7.29 #	18.6 #	19.1 M	18.4 #	14.7 M	8.12 M
Iron	<1000 mg/kg	TM181		86800 #	172000 #	32200 #	26300 #	26200 #	31100 #
Lead	<0.7 mg/kg	TM181		37.2 #	121 #	49.9 M	19.5 #	34.6 M	19.5 M
Manganese	<0.13 mg/kg	TM181		2800 #	6390 #	2750 M	1670 #	289 M	1210 M
Mercury	<0.14 mg/kg	TM181		<0.14 #	<1.4 #	0.439 M	<0.14 #	<0.14 M	<0.14 M
Nickel	<0.2 mg/kg	TM181		8.79 #	21.4 #	13.5 M	26.8 #	24 M	29.2 M
Selenium	<1 mg/kg	TM181		<1 #	<10 #	<1 #	<1 #	<1 #	<1 #
Vanadium	<0.2 mg/kg	TM181		43.4 #	199 #	82 #	95.7 #	61.7 #	43 #
Zinc	<1.9 mg/kg	TM181		160 #	367 #	174 M	92.2 #	126 M	90.8 M
Sulphate, acid soluble (total)	<0.02 %	TM221		0.228	0.296	0.167	0.233	0.094	0.0254
Water Soluble Sulphate as SO4 2:1 Extract	<0.004 g/l	TM243		0.214 #	0.211 #	0.0768 M	0.511 #	0.129 M	0.0367 M
Soluble Sulphate 2:1 extract as SO4 BRE	<0.004 g/l	TM243		0.214 #	0.211 #	0.0768 M	0.511 #	0.129 M	0.0367 M

Validated

CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

Results Legend	
#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-3+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	WSBP108	WSBP109	WSBP109	WSBP109		
			Depth (m)	3.40 - 4.00	0.30 - 0.30	1.00 - 1.00	1.60 - 1.60		
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)		
			Date Sampled	20/08/2019	21/08/2019	21/08/2019	21/08/2019		
			Sample Time	00:00	00:00	00:00	00:00		
			Date Received	28/08/2019	28/08/2019	28/08/2019	28/08/2019		
			SDG Ref	190828-36	190828-36	190828-36	190828-36		
			Lab Sample No.(s)	20598778	20598625	20598767	20598871		
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		80	7.5	15	32		
Exchangeable Ammonia as N	<12 mg/kg	TM024		267 M	<12 M	34.5 M	222 M		
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 @ M	<0.01 M	0.0236 @ #	<0.01 M		
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 @ M	<0.01 M	<0.01 @ #	<0.01 M		
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 @ M	<0.015 M	0.0944 @ #	<0.015 M		
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 @ M	<0.035 M	0.118 @ #	<0.035 M		
Sulphur, Total	<0.02 %	TM132		2.88	0.27	0.223	0.0826		
Sulphate, Total potential	<0.06 %	TM132		8.64	0.81	0.669	0.248		
Soil Organic Matter (SOM)	<0.35 %	TM132		67.6 #	3.72 #	7.05 #	3.74 #		
pH	1 pH Units	TM133		6.45 M	8.93 M	7.92 M	6.92 M		
Cyanide, Total	<1 mg/kg	TM153		<1 M	<1 M	2.58 M	<1 M		
Cyanide, Free	<1 mg/kg	TM153		<1 M	<1 M	0.0118 M	<1 M		
Arsenic	<0.6 mg/kg	TM181		1.21 M	8.08 M	9.74 M	12.3 M		
Cadmium	<0.02 mg/kg	TM181		<0.02 M	<0.02 M	0.448 M	<0.02 M		
Chromium	<0.9 mg/kg	TM181		20.6 M	35 M	17 M	33 M		
Copper	<1.4 mg/kg	TM181		2.15 M	9.06 M	25 M	14.9 M		
Iron	<1000 mg/kg	TM181		10400 #	13700 #	23800 #	28100 #		
Lead	<0.7 mg/kg	TM181		4.82 M	5.26 M	34.9 M	31 M		
Manganese	<0.13 mg/kg	TM181		1590 M	2320 M	2510 M	232 M		
Mercury	<0.14 mg/kg	TM181		<0.14 M	<0.14 M	<0.14 M	<0.14 M		
Nickel	<0.2 mg/kg	TM181		2.09 M	23.8 M	27.2 M	25.3 M		
Selenium	<1 mg/kg	TM181		1.26 #	<1 #	1.19 #	<1 #		
Vanadium	<0.2 mg/kg	TM181		25.3 #	24 #	34.9 #	49.9 #		
Zinc	<1.9 mg/kg	TM181		13.2 M	50.2 M	155 M	120 M		
Sulphate, acid soluble (total)	<0.02 %	TM221		0.381	0.408	0.144	0.0451		
Water Soluble Sulphate as SO4 2:1 Extract	<0.004 g/l	TM243		0.298 M	0.595 M	0.115 M	0.0382 M		
Soluble Sulphate 2:1 extract as SO4 BRE	<0.004 g/l	TM243		0.298 M	0.595 M	0.115 M	0.0382 M		

CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

EPH CWG (Aliphatic) GC (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-3+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	Depth (m)	Sample Type	Date Sampled	Sample Time	Date Received	SDG Ref	Lab Sample No.(s)	AGS Reference
			WS01	1.80 - 1.80	Soil/Solid (S)	22/08/2019	00:00	28/08/2019	190828-36	20598417	
Aliphatics >C12-C16	<0.1 mg/kg	TM173	1570								
Aliphatics >C16-C21	<0.1 mg/kg	TM173	375								
Aliphatics >C21-C35	<0.1 mg/kg	TM173	114								
Aliphatics >C35-C44	<0.1 mg/kg	TM173	6.62								
Total Aliphatics >C12-C44	<0.1 mg/kg	TM173	2070								

Validated

CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

EPH CWG (Aromatic) GC (S)

Results Legend	
#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-3+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	Depth (m)	Sample Type	Date Sampled	Sample Time	Date Received	SDG Ref	Lab Sample No.(s)	AGS Reference
			WS01	1.80 - 1.80	Soil/Solid (S)	22/08/2019	00:00	28/08/2019	190828-36	20598417	
Aromatics >EC12-EC16	<0.1 mg/kg	TM173	3940								
Aromatics >EC16-EC21	<0.1 mg/kg	TM173	15700								
Aromatics >EC21-EC35	<0.1 mg/kg	TM173	12400								
Aromatics >EC35-EC44	<0.1 mg/kg	TM173	1470								
Aromatics >EC40-EC44	<0.1 mg/kg	TM173	383								
Total Aromatics >EC12-EC44	<0.1 mg/kg	TM173	33500								

Validated

CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-3+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	BHCP105	BHCP105	BHCP105	CPB5	CPB5	CPB5
			Depth (m)	0.30 - 0.30	0.50 - 0.50	1.00 - 1.00	4.00 - 4.00	7.80 - 7.80	8.70 - 8.70
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	20/08/2019	20/08/2019	20/08/2019	22/08/2019	22/08/2019	22/08/2019
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	28/08/2019	28/08/2019	28/08/2019	28/08/2019	28/08/2019	28/08/2019
			SDG Ref	190828-36	190828-36	190828-36	190828-36	190828-36	190828-36
			Lab Sample No.(s)	20598637	20598655	20598666	20598446	20598438	20598427
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		88.5	89.4	89.3	92.4	94.7	92.7
Acenaphthene-d10 % recovery**	%	TM218		89.9	91.6	96.4	94.8	89.4	91.4
Phenanthrene-d10 % recovery**	%	TM218		93.3	86.5	88.8	96.6	88.2	92.9
Chrysene-d12 % recovery**	%	TM218		94.8	81.4	84.8	89.1	95.6	89.3
Perylene-d12 % recovery**	%	TM218		91	77.5	78.3	88.5	88.9	92.2
Naphthalene	<0.009 mg/kg	TM218		0.0646 @ M	0.153 @ M	0.107 @ M	0.03 M	0.031 M	0.0112 M
Acenaphthylene	<0.012 mg/kg	TM218		0.0744 @ M	0.0601 @ M	0.0375 @ M	<0.012 M	<0.012 M	<0.012 M
Acenaphthene	<0.008 mg/kg	TM218		<0.016 @ M	0.0583 @ M	0.0368 @ M	<0.008 M	<0.008 M	<0.008 M
Fluorene	<0.01 mg/kg	TM218		0.0602 @ M	0.144 @ M	0.0885 @ M	<0.01 M	<0.01 M	<0.01 M
Phenanthrene	<0.015 mg/kg	TM218		0.324 @ M	0.402 @ M	0.239 @ M	0.0363 M	0.0956 M	0.0271 M
Anthracene	<0.016 mg/kg	TM218		0.0685 @ M	0.054 @ M	0.0453 @ M	<0.016 M	<0.016 M	<0.016 M
Fluoranthene	<0.017 mg/kg	TM218		0.415 @ M	0.402 @ M	0.229 @ M	0.0397 M	0.15 M	0.032 M
Pyrene	<0.015 mg/kg	TM218		0.321 @ M	0.386 @ M	0.231 @ M	0.0256 M	0.0958 M	0.0216 M
Benz(a)anthracene	<0.014 mg/kg	TM218		0.183 @ M	0.145 @ M	0.0829 @ M	<0.014 M	0.0661 M	<0.014 M
Chrysene	<0.01 mg/kg	TM218		0.172 @ M	0.152 @ M	0.08 @ M	<0.01 M	0.0504 M	<0.01 M
Benzo(b)fluoranthene	<0.015 mg/kg	TM218		0.192 @ M	0.229 @ M	0.148 @ M	<0.015 M	0.0737 M	0.018 M
Benzo(k)fluoranthene	<0.014 mg/kg	TM218		0.0723 @ M	0.0635 @ M	0.0282 @ M	<0.014 M	<0.014 M	<0.014 M
Benzo(a)pyrene	<0.015 mg/kg	TM218		0.16 @ M	0.11 @ M	0.0583 @ M	<0.015 M	0.0465 M	<0.015 M
Indeno(1,2,3-cd)pyrene	<0.018 mg/kg	TM218		0.151 @ M	0.105 @ M	0.0567 @ M	<0.018 M	<0.018 M	<0.018 M
Dibenzo(a,h)anthracene	<0.023 mg/kg	TM218		<0.046 @ M	<0.023 @ M	<0.023 @ M	<0.023 M	<0.023 M	<0.023 M
Benzo(g,h,i)perylene	<0.024 mg/kg	TM218		0.134 @ M	0.0964 @ M	0.0574 @ M	<0.024 M	<0.024 M	<0.024 M
PAH, Total Detected USEPA 16	<0.118 mg/kg	TM218		2.39	2.56	1.53	0.132	0.61	<0.118

Validated

CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-3+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	CPB7	CPB7	CPB7	CPB9	CPB9	CPB9
			Depth (m)	2.70 - 2.70	4.70 - 4.70	6.60 - 6.60	3.50 - 3.50	6.50 - 6.50	7.60 - 7.60
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	21/08/2019	21/08/2019	21/08/2019	19/08/2019	19/08/2019	19/08/2019
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	28/08/2019	28/08/2019	28/08/2019	28/08/2019	28/08/2019	28/08/2019
			SDG Ref	190828-36	190828-36	190828-36	190828-36	190828-36	190828-36
			Lab Sample No.(s)	20598824	20598832	20598839	20598847	20598859	20598882
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		82.8	83.9	94.8	85.6	89.5	91.6
Acenaphthene-d10 % recovery**	%	TM218		86.9	84	92.4	84.6	88.3	92
Phenanthrene-d10 % recovery**	%	TM218		89.3	84.9	91	81.4	86.1	89.2
Chrysene-d12 % recovery**	%	TM218		81.1	78.8	95.4	78.7	79.2	91.2
Perylene-d12 % recovery**	%	TM218		77.5	78.2	86.5	74.9	74	91.6
Naphthalene	<0.009 mg/kg	TM218		0.266 M	<0.009 M	0.128 M	0.335 M	0.0448 M	0.022 @ M
Acenaphthylene	<0.012 mg/kg	TM218		0.0468 M	<0.012 M	<0.012 M	1.14 M	0.181 M	0.0313 @ M
Acenaphthene	<0.008 mg/kg	TM218		0.0229 M	<0.008 M	<0.008 M	0.588 M	0.097 M	0.0135 @ M
Fluorene	<0.01 mg/kg	TM218		0.0723 M	<0.01 M	0.0363 M	2.31 M	0.276 M	0.0325 @ M
Phenanthrene	<0.015 mg/kg	TM218		0.504 M	<0.015 M	0.22 M	10.2 M	1.35 M	0.221 @ M
Anthracene	<0.016 mg/kg	TM218		0.114 M	<0.016 M	<0.016 M	2.36 M	0.298 M	0.0548 @ M
Fluoranthene	<0.017 mg/kg	TM218		0.813 M	0.0251 M	0.299 M	10 M	1.66 M	0.386 @ M
Pyrene	<0.015 mg/kg	TM218		0.615 M	<0.015 M	0.209 M	6.32 M	1.04 M	0.242 @ M
Benz(a)anthracene	<0.014 mg/kg	TM218		0.362 M	<0.014 M	0.127 M	2.92 M	0.53 M	0.125 @ M
Chrysene	<0.01 mg/kg	TM218		0.339 M	<0.01 M	0.106 M	2.49 M	0.441 M	0.0917 @ M
Benzo(b)fluoranthene	<0.015 mg/kg	TM218		0.634 M	<0.015 M	0.129 M	3.32 M	0.65 M	0.156 @ M
Benzo(k)fluoranthene	<0.014 mg/kg	TM218		0.196 M	<0.014 M	0.0479 M	1.2 M	0.229 M	0.0457 @ M
Benzo(a)pyrene	<0.015 mg/kg	TM218		0.334 M	<0.015 M	0.0893 M	2.18 M	0.395 M	0.0902 @ M
Indeno(1,2,3-cd)pyrene	<0.018 mg/kg	TM218		0.357 M	<0.018 M	0.067 M	1.79 M	0.281 M	0.0693 @ M
Dibenzo(a,h)anthracene	<0.023 mg/kg	TM218		0.0656 M	<0.023 M	<0.023 M	0.291 M	<0.023 M	<0.023 @ M
Benzo(g,h,i)perylene	<0.024 mg/kg	TM218		0.283 M	<0.024 M	0.0741 M	1.47 M	0.334 M	0.0634 @ M
PAH, Total Detected USEPA 16	<0.118 mg/kg	TM218		5.02	<0.118	1.53	48.9	7.8	1.64

Validated

CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-3+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	CPB9	CPB11	CPB11	CPB11	CPB13	CPB13
			Depth (m)	8.60 - 8.60	3.50 - 3.50	5.50 - 5.50	9.50 - 9.50	10.10 - 10.10	2.20 - 2.20
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	19/08/2019	20/08/2019	20/08/2019	20/08/2019	22/08/2019	22/08/2019
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	28/08/2019	28/08/2019	28/08/2019	28/08/2019	28/08/2019	28/08/2019
			SDG Ref	190828-36	190828-36	190828-36	190828-36	190828-36	190828-36
			Lab Sample No.(s)	20598896	20598788	20598798	20598808	20598531	20598492
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		97	94	82.7	94.9	93.2	88.5
Acenaphthene-d10 % recovery**	%	TM218		94.8	91.7	83.5	89	94	88.4
Phenanthrene-d10 % recovery**	%	TM218		90.6	89.1	86.6	84.7	100	86
Chrysene-d12 % recovery**	%	TM218		92.2	95.2	88.1	94.3	103	83.8
Perylene-d12 % recovery**	%	TM218		91.9	89.8	75.9	92.1	91.2	80.2
Naphthalene	<0.009 mg/kg	TM218		<0.009 @ M	0.382 M	<0.009 M	0.505 @ M	0.0207 M	<0.009 @ M
Acenaphthylene	<0.012 mg/kg	TM218		<0.012 @ M	0.352 M	<0.012 M	0.326 @ M	<0.012 M	<0.012 @ M
Acenaphthene	<0.008 mg/kg	TM218		<0.008 @ M	0.132 M	<0.008 M	0.046 @ M	<0.008 M	<0.008 @ M
Fluorene	<0.01 mg/kg	TM218		<0.01 @ M	0.462 M	<0.01 M	0.196 @ M	<0.01 M	<0.01 @ M
Phenanthrene	<0.015 mg/kg	TM218		<0.015 @ M	2.56 M	0.0483 M	0.938 @ M	<0.015 M	<0.015 @ M
Anthracene	<0.016 mg/kg	TM218		<0.016 @ M	0.596 M	<0.016 M	0.28 @ M	<0.016 M	<0.016 @ M
Fluoranthene	<0.017 mg/kg	TM218		0.0389 @ M	3.53 M	0.0678 M	1.59 @ M	<0.017 M	<0.017 @ M
Pyrene	<0.015 mg/kg	TM218		0.0299 @ M	2.39 M	0.0439 M	1.06 @ M	<0.015 M	<0.015 @ M
Benz(a)anthracene	<0.014 mg/kg	TM218		0.0312 @ M	1.35 M	<0.014 M	0.688 @ M	<0.014 M	<0.014 @ M
Chrysene	<0.01 mg/kg	TM218		0.0259 @ M	1.13 M	<0.01 M	0.523 @ M	<0.01 M	<0.01 @ M
Benzo(b)fluoranthene	<0.015 mg/kg	TM218		0.0551 @ M	1.1 M	<0.015 M	0.746 @ M	<0.015 M	<0.015 @ M
Benzo(k)fluoranthene	<0.014 mg/kg	TM218		0.0169 @ M	0.529 M	<0.014 M	0.282 @ M	<0.014 M	<0.014 @ M
Benzo(a)pyrene	<0.015 mg/kg	TM218		0.0304 @ M	1.04 M	<0.015 M	0.629 @ M	<0.015 M	<0.015 @ M
Indeno(1,2,3-cd)pyrene	<0.018 mg/kg	TM218		0.0311 @ M	0.794 M	<0.018 M	0.541 @ M	<0.018 M	<0.018 @ M
Dibenzo(a,h)anthracene	<0.023 mg/kg	TM218		<0.023 @ M	0.151 M	<0.023 M	0.0978 @ M	<0.023 M	<0.023 @ M
Benzo(g,h,i)perylene	<0.024 mg/kg	TM218		<0.024 @ M	0.77 M	<0.024 M	0.493 @ M	<0.024 M	<0.024 @ M
PAH, Total Detected USEPA 16	<0.118 mg/kg	TM218		0.259	17.3	0.16	8.94	<0.118	<0.118

Validated

CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

PAH by GCMS

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-3+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	CPB13	CPB18	CPB18	CPB18	CPBP101	CPBP101
			Depth (m)	4.20 - 4.20	0.30 - 0.30	0.50 - 0.50	1.90 - 1.90	0.30 - 0.30	1.00 - 1.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	22/08/2019	21/08/2019	21/08/2019	21/08/2019	20/08/2019	20/08/2019
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	28/08/2019	28/08/2019	28/08/2019	28/08/2019	28/08/2019	28/08/2019
			SDG Ref	190828-36	190828-36	190828-36	190828-36	190828-36	190828-36
			Lab Sample No.(s)	20598466	20598207	20598340	20598478	20598715	20598729
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		86.5	84.7	88.1	84.1	96.4	88.8
Acenaphthene-d10 % recovery**	%	TM218		87.7	82.2	87.3	85.6	79.9	92.4
Phenanthrene-d10 % recovery**	%	TM218		85.4	78.6	83.5	86.6	88.1	87
Chrysene-d12 % recovery**	%	TM218		80.2	64	64.7	77.2	79.8	88.7
Perylene-d12 % recovery**	%	TM218		75.9	59.1	56.4	71.8	78.1	86.8
Naphthalene	<0.009 mg/kg	TM218		<0.009 @ M	0.182 @ M	1.66 @ M	0.0556 M	1.35 @ M	1.54 @ M
Acenaphthylene	<0.012 mg/kg	TM218		<0.012 @ M	<0.06 @ M	0.162 @ M	<0.012 M	0.99 @ M	0.359 @ M
Acenaphthene	<0.008 mg/kg	TM218		<0.008 @ M	<0.04 @ M	1.61 @ M	0.0285 M	0.598 @ M	0.814 @ M
Fluorene	<0.01 mg/kg	TM218		<0.01 @ M	0.0867 @ M	1.76 @ M	0.0334 M	1.46 @ M	1.35 @ M
Phenanthrene	<0.015 mg/kg	TM218		<0.015 @ M	0.46 @ M	9.65 @ M	0.316 M	30.8 @ M	16.4 @ M
Anthracene	<0.016 mg/kg	TM218		<0.016 @ M	0.115 @ M	2.57 @ M	0.0642 M	4.27 @ M	2.55 @ M
Fluoranthene	<0.017 mg/kg	TM218		<0.017 @ M	0.677 @ M	9 @ M	0.486 M	34.8 @ M	17.3 @ M
Pyrene	<0.015 mg/kg	TM218		<0.015 @ M	0.639 @ M	7.06 @ M	0.406 M	21.5 @ M	11.1 @ M
Benz(a)anthracene	<0.014 mg/kg	TM218		<0.014 @ M	0.379 @ M	3.1 @ M	0.26 M	10.1 @ M	5.9 @ M
Chrysene	<0.01 mg/kg	TM218		<0.01 @ M	0.376 @ M	2.71 @ M	0.269 M	8.87 @ M	5.81 @ M
Benzo(b)fluoranthene	<0.015 mg/kg	TM218		<0.015 @ M	0.782 @ M	3.27 @ M	0.377 M	10.2 @ M	7.65 @ M
Benzo(k)fluoranthene	<0.014 mg/kg	TM218		<0.014 @ M	0.226 @ M	1.16 @ M	0.125 M	3.96 @ M	2.57 @ M
Benzo(a)pyrene	<0.015 mg/kg	TM218		<0.015 @ M	0.45 @ M	2.07 @ M	0.233 M	7.05 @ M	4.62 @ M
Indeno(1,2,3-cd)pyrene	<0.018 mg/kg	TM218		<0.018 @ M	0.452 @ M	1.33 @ M	0.216 M	6.6 @ M	3.81 @ M
Dibenzo(a,h)anthracene	<0.023 mg/kg	TM218		<0.023 @ M	<0.115 @ M	0.316 @ M	<0.023 M	1.29 @ M	0.615 @ M
Benzo(g,h,i)perylene	<0.024 mg/kg	TM218		<0.024 @ M	0.41 @ M	1.1 @ M	0.183 M	5.54 @ M	3.17 @ M
PAH, Total Detected USEPA 16	<0.118 mg/kg	TM218		<0.118	5.23	48.5	3.05	149	85.6

Validated

CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-3+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	CPBP101	CPBR3	CPBR3	CPBR3	CPBR3	CPBR4
			Depth (m)	1.50 - 1.50	3.40 - 3.40	4.80 - 4.80	7.40 - 7.40	9.10 - 9.10	2.50 - 2.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	20/08/2019	20/08/2019	20/08/2019	20/08/2019	20/08/2019	21/08/2019
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	28/08/2019	28/08/2019	28/08/2019	28/08/2019	28/08/2019	28/08/2019
			SDG Ref	190828-36	190828-36	190828-36	190828-36	190828-36	190828-36
			Lab Sample No.(s)	20598741	20598911	20598922	20598930	20598817	20598217
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		83.9	92.2	91.3	90.5	101	92.4
Acenaphthene-d10 % recovery**	%	TM218		88.4	91.9	92	92.1	96.9	94.1
Phenanthrene-d10 % recovery**	%	TM218		87.8	89.3	88.6	94.8	93.4	95.5
Chrysene-d12 % recovery**	%	TM218		87.7	85.4	80.2	89.4	91.5	92.8
Perylene-d12 % recovery**	%	TM218		93.1	73.7	73.7	82.5	88.8	91.6
Naphthalene	<0.009 mg/kg	TM218		1.49 M	0.642 @ M	0.26 M	<0.018 @ M	<0.009 M	2.36 M
Acenaphthylene	<0.012 mg/kg	TM218		0.253 M	0.182 @ M	0.0828 M	<0.024 @ M	<0.012 M	0.899 M
Acenaphthene	<0.008 mg/kg	TM218		0.634 M	0.0626 @ M	<0.008 M	<0.016 @ M	<0.008 M	0.654 M
Fluorene	<0.01 mg/kg	TM218		1.2 M	0.173 @ M	0.0942 M	<0.02 @ M	<0.01 M	1.97 M
Phenanthrene	<0.015 mg/kg	TM218		12.4 M	0.712 @ M	0.497 M	0.0832 @ M	<0.015 M	7.52 M
Anthracene	<0.016 mg/kg	TM218		1.91 M	0.183 @ M	0.109 M	<0.032 @ M	<0.016 M	1.78 M
Fluoranthene	<0.017 mg/kg	TM218		<0.085 M	2.01 @ M	0.789 M	0.182 @ M	<0.017 M	8.36 M
Pyrene	<0.015 mg/kg	TM218		8.26 M	1.5 @ M	0.55 M	0.136 @ M	<0.015 M	5.14 M
Benz(a)anthracene	<0.014 mg/kg	TM218		3.97 M	0.757 @ M	0.303 M	0.0702 @ M	<0.014 M	2.77 M
Chrysene	<0.01 mg/kg	TM218		3.32 M	0.685 @ M	0.287 M	0.061 @ M	<0.01 M	1.99 M
Benzo(b)fluoranthene	<0.015 mg/kg	TM218		5.2 M	0.989 @ M	0.436 M	<0.03 @ M	<0.015 M	3.35 M
Benzo(k)fluoranthene	<0.014 mg/kg	TM218		1.73 M	0.327 @ M	0.141 M	<0.028 @ M	<0.014 M	1.08 M
Benzo(a)pyrene	<0.015 mg/kg	TM218		3.05 M	0.613 @ M	0.229 M	<0.03 @ M	<0.015 M	1.93 M
Indeno(1,2,3-cd)pyrene	<0.018 mg/kg	TM218		2.9 M	0.457 @ M	0.204 M	<0.036 @ M	<0.018 M	1.87 M
Dibenzo(a,h)anthracene	<0.023 mg/kg	TM218		0.389 M	0.116 @ M	<0.023 M	<0.046 @ M	<0.023 M	0.276 M
Benzo(g,h,i)perylene	<0.024 mg/kg	TM218		2.15 M	0.493 @ M	0.201 M	<0.048 @ M	<0.024 M	1.22 M
PAH, Total Detected USEPA 16	<0.118 mg/kg	TM218		48.9	9.9	4.18	0.533	<0.118	43.2

Validated

CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-3+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	CPBR4	CPBR4	CPBR4	CPBR9	CPBR9	CPBR9
			Depth (m)	3.50 - 3.50	7.50 - 7.50	9.40 - 9.40	3.10 - 3.10	4.20 - 4.20	8.80 - 8.80
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	21/08/2019	21/08/2019	21/08/2019	21/08/2019	21/08/2019	21/08/2019
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	28/08/2019	28/08/2019	28/08/2019	28/08/2019	28/08/2019	28/08/2019
			SDG Ref	190828-36	190828-36	190828-36	190828-36	190828-36	190828-36
			Lab Sample No.(s)	20598227	20598239	20598248	20598939	20598946	20598956
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		90.8	90.7	94.9	93.4	91.2	94.7
Acenaphthene-d10 % recovery**	%	TM218		92.8	89.3	96.5	92	90.4	95
Phenanthrene-d10 % recovery**	%	TM218		95	87	97	90.8	89.2	100
Chrysene-d12 % recovery**	%	TM218		94.8	78.3	98.8	83.4	85.1	104
Perylene-d12 % recovery**	%	TM218		93.6	75.2	94.9	77	82.3	102
Naphthalene	<0.009 mg/kg	TM218		1.72 M	0.264 @ M	0.0781 @ M	<0.009 M	<0.009 M	0.0306 M
Acenaphthylene	<0.012 mg/kg	TM218		0.854 M	<0.024 @ M	0.0234 @ M	<0.012 M	<0.012 M	<0.012 M
Acenaphthene	<0.008 mg/kg	TM218		1.13 M	0.123 @ M	<0.008 @ M	<0.008 M	<0.008 M	<0.008 M
Fluorene	<0.01 mg/kg	TM218		2.6 M	0.149 @ M	0.022 @ M	<0.01 M	<0.01 M	<0.01 M
Phenanthrene	<0.015 mg/kg	TM218		8.98 M	0.508 @ M	0.0907 @ M	0.0526 M	<0.015 M	0.0726 M
Anthracene	<0.016 mg/kg	TM218		1.69 M	0.315 @ M	0.0268 @ M	<0.016 M	<0.016 M	0.021 M
Fluoranthene	<0.017 mg/kg	TM218		8.06 M	0.399 @ M	0.223 @ M	0.0817 M	<0.017 M	0.141 M
Pyrene	<0.015 mg/kg	TM218		4.82 M	0.261 @ M	0.153 @ M	0.0614 M	<0.015 M	0.121 M
Benz(a)anthracene	<0.014 mg/kg	TM218		2.5 M	0.112 @ M	0.105 @ M	0.0503 M	<0.014 M	0.118 M
Chrysene	<0.01 mg/kg	TM218		1.71 M	0.104 @ M	0.0919 @ M	0.0437 M	<0.01 M	0.116 M
Benzo(b)fluoranthene	<0.015 mg/kg	TM218		2.77 M	0.135 @ M	0.109 @ M	0.0709 M	<0.015 M	0.209 M
Benzo(k)fluoranthene	<0.014 mg/kg	TM218		0.946 M	<0.028 @ M	0.0383 @ M	<0.014 M	<0.014 M	0.081 M
Benzo(a)pyrene	<0.015 mg/kg	TM218		1.64 M	<0.03 @ M	0.0655 @ M	<0.015 M	<0.015 M	0.116 M
Indeno(1,2,3-cd)pyrene	<0.018 mg/kg	TM218		1.53 M	<0.036 @ M	0.061 @ M	<0.018 M	<0.018 M	0.102 M
Dibenzo(a,h)anthracene	<0.023 mg/kg	TM218		0.216 M	<0.046 @ M	<0.023 @ M	<0.023 M	<0.023 M	<0.023 M
Benzo(g,h,i)perylene	<0.024 mg/kg	TM218		0.995 M	<0.048 @ M	0.0424 @ M	<0.024 M	<0.024 M	0.11 M
PAH, Total Detected USEPA 16	<0.118 mg/kg	TM218		42.2	2.37	1.13	0.361	<0.118	1.24

Validated

CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-3+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	WS01	WS01	WS01	WS04	WS04	WS04
			Depth (m)	0.30 - 0.30	0.50 - 0.50	1.80 - 1.80	0.30 - 0.30	1.00 - 1.00	3.40 - 3.80
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	22/08/2019	22/08/2019	22/08/2019	22/08/2019	22/08/2019	22/08/2019
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	28/08/2019	28/08/2019	28/08/2019	28/08/2019	28/08/2019	28/08/2019
			SDG Ref	190828-36	190828-36	190828-36	190828-36	190828-36	190828-36
			Lab Sample No.(s)	20598388	20598407	20598417	20598362	20598372	20598505
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		82.5	101	125	86.5	94.4	94.7
Acenaphthene-d10 % recovery**	%	TM218		78	69.5	355	75.9	92.8	94.5
Phenanthrene-d10 % recovery**	%	TM218		77.5	93	80	85.4	86	95.1
Chrysene-d12 % recovery**	%	TM218		93.5	106	105	85.5	80	103
Perylene-d12 % recovery**	%	TM218		88.5	99.5	65	75.5	77	95
Naphthalene	<0.009 mg/kg	TM218		50.9 M	5.74 M	3700	15.7 @ M	12.3 @ M	0.138 M
Acenaphthylene	<0.012 mg/kg	TM218		33.8 M	3.2 M	169	13.6 @ M	4.66 @ M	<0.012 M
Acenaphthene	<0.008 mg/kg	TM218		2.6 M	<0.4 M	447	2.75 @ M	3.16 @ M	<0.008 M
Fluorene	<0.01 mg/kg	TM218		34.9 M	3.45 M	3670	23.2 @ M	14 @ M	0.0486 M
Phenanthrene	<0.015 mg/kg	TM218		137 M	14.1 M	10300	80.2 @ M	98.8 @ M	0.264 M
Anthracene	<0.016 mg/kg	TM218		37.1 M	3.65 M	1500	15.4 @ M	16.8 @ M	<0.016 M
Fluoranthene	<0.017 mg/kg	TM218		182 M	17.3 M	6870	62 @ M	109 @ M	0.26 M
Pyrene	<0.015 mg/kg	TM218		125 M	11.7 M	4260	40.3 @ M	63.4 @ M	0.138 M
Benz(a)anthracene	<0.014 mg/kg	TM218		79.2 M	7.52 M	1740	18 @ M	9.61 @ M	<0.014 M
Chrysene	<0.01 mg/kg	TM218		67.2 M	6.43 M	1060	14 @ M	8.82 @ M	<0.01 M
Benzo(b)fluoranthene	<0.015 mg/kg	TM218		88.7 M	6.82 M	1500	13.9 @ M	11.2 @ M	<0.015 M
Benzo(k)fluoranthene	<0.014 mg/kg	TM218		33.7 M	3.23 M	535	6.01 @ M	4.11 @ M	<0.014 M
Benzo(a)pyrene	<0.015 mg/kg	TM218		64.5 M	5.63 M	871	10.8 @ M	6.43 @ M	<0.015 M
Indeno(1,2,3-cd)pyrene	<0.018 mg/kg	TM218		47.6 M	4.21 M	655	8.25 @ M	6.34 @ M	<0.018 M
Dibenzo(a,h)anthracene	<0.023 mg/kg	TM218		10.3 M	<1.15 M	94.1	1.41 @ M	1.07 @ M	<0.023 M
Benzo(g,h,i)perylene	<0.024 mg/kg	TM218		44.4 M	3.69 M	376	6.22 @ M	5.07 @ M	<0.024 M
PAH, Total Detected USEPA 16	<0.118 mg/kg	TM218		1040	96.6	37800	332	375	0.848

Validated

CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-3+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	WS13	WS13	WS13	WS13	WS19	WS19
			Depth (m)	0.30 - 0.30	0.50 - 0.50	1.00 - 1.00	1.80 - 1.80	0.30 - 0.30	1.00 - 1.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	22/08/2019	22/08/2019	22/08/2019	22/08/2019	22/08/2019	22/08/2019
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	28/08/2019	28/08/2019	28/08/2019	28/08/2019	28/08/2019	28/08/2019
			SDG Ref	190828-36	190828-36	190828-36	190828-36	190828-36	190828-36
			Lab Sample No.(s)	20598264	20598278	20598286	20598295	20598310	20598327
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		95.1	86.4	91.4	92.5	92.9	92.6
Acenaphthene-d10 % recovery**	%	TM218		93.6	89.7	91	98.6	91.4	91.2
Phenanthrene-d10 % recovery**	%	TM218		91.9	89.1	90.4	96.3	85.1	86.9
Chrysene-d12 % recovery**	%	TM218		82.9	80.9	83.6	103	86.1	91.1
Perylene-d12 % recovery**	%	TM218		82.7	77.5	83.3	95.9	78.9	87
Naphthalene	<0.009 mg/kg	TM218		1.14 @ M	1.47 M	0.93 #	7.08 M	0.708 M	0.546 M
Acenaphthylene	<0.012 mg/kg	TM218		1.04 @ M	1.39 M	1.48 #	0.158 M	0.328 M	0.246 M
Acenaphthene	<0.008 mg/kg	TM218		0.173 @ M	0.752 M	2.9 #	3.05 M	0.0471 M	0.0303 M
Fluorene	<0.01 mg/kg	TM218		0.483 @ M	0.832 M	1.67 #	1.71 M	0.0849 M	0.0442 M
Phenanthrene	<0.015 mg/kg	TM218		8.66 @ M	13.1 M	1.54 #	2.54 M	0.563 M	0.407 M
Anthracene	<0.016 mg/kg	TM218		2.42 @ M	3.16 M	1.27 #	0.325 M	0.161 M	0.123 M
Fluoranthene	<0.017 mg/kg	TM218		16.7 @ M	22 M	4.22 #	0.761 M	1.01 M	0.917 M
Pyrene	<0.015 mg/kg	TM218		13.5 @ M	17.6 M	2.84 #	0.56 M	0.761 M	0.721 M
Benz(a)anthracene	<0.014 mg/kg	TM218		8.85 @ M	12.8 M	1.49 #	0.234 M	0.585 M	0.582 M
Chrysene	<0.01 mg/kg	TM218		7.69 @ M	11.8 M	1.37 #	0.268 M	0.536 M	0.56 M
Benzo(b)fluoranthene	<0.015 mg/kg	TM218		11.6 @ M	17.1 M	2.23 #	0.395 M	0.867 M	0.917 M
Benzo(k)fluoranthene	<0.014 mg/kg	TM218		4.08 @ M	7.45 M	0.836 #	0.141 M	0.308 M	0.319 M
Benzo(a)pyrene	<0.015 mg/kg	TM218		7.84 @ M	10 M	1.32 #	0.184 M	0.54 M	0.559 M
Indeno(1,2,3-cd)pyrene	<0.018 mg/kg	TM218		7.54 @ M	10.3 M	1.64 #	0.218 M	0.508 M	0.582 M
Dibenzo(a,h)anthracene	<0.023 mg/kg	TM218		1.63 @ M	1.89 M	0.286 #	<0.023 M	0.107 M	0.119 M
Benzo(g,h,i)perylene	<0.024 mg/kg	TM218		6.66 @ M	8.33 M	1.58 #	0.177 M	0.515 M	0.563 M
PAH, Total Detected USEPA 16	<0.118 mg/kg	TM218		99.9	140	27.6	17.8	7.63	7.24

Validated

CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-3+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	WS19	WS20	WSBP104	WSBP104	WSBP104	WSBP105
			Depth (m)	1.80 - 1.80	1.80 - 1.80	0.30 - 0.30	1.00 - 1.00	1.80 - 1.80	0.30 - 0.30
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	22/08/2019	22/08/2019	20/08/2019	20/08/2019	20/08/2019	20/08/2019
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	28/08/2019	28/08/2019	28/08/2019	28/08/2019	28/08/2019	28/08/2019
			SDG Ref	190828-36	190828-36	190828-36	190828-36	190828-36	190828-36
			Lab Sample No.(s)	20598351	20598518	20598585	20598597	20598613	20598682
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		89.6	91.8	90.6	85.4	91.6	95.8
Acenaphthene-d10 % recovery**	%	TM218		81.9	88.5	92.3	89	89.8	93.8
Phenanthrene-d10 % recovery**	%	TM218		84	86.3	94.4	89.5	91.2	92.1
Chrysene-d12 % recovery**	%	TM218		89.1	95.6	97.3	76.3	82.3	85.8
Perylene-d12 % recovery**	%	TM218		83.1	89.5	98	78.3	80.9	84.9
Naphthalene	<0.009 mg/kg	TM218		0.0641 M	<0.009 M	0.0567 @ M	0.341 @ #	0.35 @ M	1.01 @ #
Acenaphthylene	<0.012 mg/kg	TM218		0.0221 M	<0.012 M	0.026 @ M	0.0662 @ #	0.0197 @ M	0.0668 @ #
Acenaphthene	<0.008 mg/kg	TM218		0.0125 M	<0.008 M	<0.008 @ M	0.221 @ #	0.0493 @ M	0.152 @ #
Fluorene	<0.01 mg/kg	TM218		<0.01 M	<0.01 M	<0.01 @ M	0.345 @ #	0.0422 @ M	0.0957 @ #
Phenanthrene	<0.015 mg/kg	TM218		0.072 M	<0.015 M	0.062 @ M	2 @ #	0.507 @ M	0.689 @ #
Anthracene	<0.016 mg/kg	TM218		<0.016 M	<0.016 M	0.0213 @ M	0.227 @ #	0.104 @ M	0.256 @ #
Fluoranthene	<0.017 mg/kg	TM218		0.0897 M	<0.017 M	0.139 @ M	2.98 @ #	0.774 @ M	2.76 @ #
Pyrene	<0.015 mg/kg	TM218		0.069 M	<0.015 M	0.118 @ M	2.78 @ #	0.708 @ M	2.33 @ #
Benz(a)anthracene	<0.014 mg/kg	TM218		0.0424 M	<0.014 M	0.0844 @ M	1.63 @ #	0.368 @ M	0.935 @ #
Chrysene	<0.01 mg/kg	TM218		0.048 M	<0.01 M	0.0967 @ M	1.9 @ #	0.363 @ M	0.782 @ #
Benzo(b)fluoranthene	<0.015 mg/kg	TM218		0.0567 M	<0.015 M	0.144 @ M	2.75 @ #	0.434 @ M	1.34 @ #
Benzo(k)fluoranthene	<0.014 mg/kg	TM218		<0.014 M	<0.014 M	0.0447 @ M	0.991 @ #	0.208 @ M	0.485 @ #
Benzo(a)pyrene	<0.015 mg/kg	TM218		0.0364 M	<0.015 M	0.0919 @ M	1.86 @ #	0.385 @ M	0.929 @ #
Indeno(1,2,3-cd)pyrene	<0.018 mg/kg	TM218		0.0348 M	<0.018 M	0.103 @ M	1.59 @ #	0.283 @ M	0.792 @ #
Dibenzo(a,h)anthracene	<0.023 mg/kg	TM218		<0.023 M	<0.023 M	<0.023 @ M	0.277 @ #	0.0581 @ M	0.123 @ #
Benzo(g,h,i)perylene	<0.024 mg/kg	TM218		<0.024 M	<0.024 M	0.0935 @ M	1.32 @ #	0.241 @ M	0.785 @ #
PAH, Total Detected USEPA 16	<0.118 mg/kg	TM218		0.548	<0.118	1.08	21.3	4.89	13.5

Validated

CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-3+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	WSBP105	WSBP105	WSBP108	WSBP108	WSBP108	WSBP108
			Depth (m)	1.00 - 1.00	1.40 - 1.40	0.30 - 0.30	1.00 - 1.00	1.50 - 1.50	2.10 - 2.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	20/08/2019	20/08/2019	20/08/2019	20/08/2019	20/08/2019	20/08/2019
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	28/08/2019	28/08/2019	28/08/2019	28/08/2019	28/08/2019	28/08/2019
			SDG Ref	190828-36	190828-36	190828-36	190828-36	190828-36	190828-36
			Lab Sample No.(s)	20598696	20598707	20598541	20598552	20598565	20598757
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		94.4	95.9	92.3	90.6	96.1	91.3
Acenaphthene-d10 % recovery**	%	TM218		91.7	92.6	91.9	85.2	89.7	89.6
Phenanthrene-d10 % recovery**	%	TM218		95	94.9	88.6	84.3	86.9	92.1
Chrysene-d12 % recovery**	%	TM218		84.8	88	90	75.7	83.4	87.8
Perylene-d12 % recovery**	%	TM218		85.5	86.9	89.2	72.6	82.8	86.2
Naphthalene	<0.009 mg/kg	TM218		0.634 @ #	0.304 @ #	0.358 @ M	6.79 @ #	2.39 @ M	0.0318 M
Acenaphthylene	<0.012 mg/kg	TM218		0.126 @ #	0.0512 @ #	0.0356 @ M	0.0498 @ #	<0.012 @ M	<0.012 M
Acenaphthene	<0.008 mg/kg	TM218		1 @ #	0.13 @ #	0.0244 @ M	0.116 @ #	<0.008 @ M	<0.008 M
Fluorene	<0.01 mg/kg	TM218		0.608 @ #	0.0911 @ #	0.0212 @ M	0.0666 @ #	<0.01 @ M	<0.01 M
Phenanthrene	<0.015 mg/kg	TM218		6.5 @ #	0.458 @ #	0.2 @ M	0.0805 @ #	0.0268 @ M	<0.015 M
Anthracene	<0.016 mg/kg	TM218		2 @ #	0.146 @ #	0.0639 @ M	<0.016 @ #	<0.016 @ M	<0.016 M
Fluoranthene	<0.017 mg/kg	TM218		11.3 @ #	1.18 @ #	0.723 @ M	0.0343 @ #	0.0419 @ M	<0.017 M
Pyrene	<0.015 mg/kg	TM218		9.07 @ #	1.06 @ #	0.625 @ M	0.0237 @ #	0.0345 @ M	<0.015 M
Benz(a)anthracene	<0.014 mg/kg	TM218		3.66 @ #	0.409 @ #	0.423 @ M	<0.014 @ #	<0.014 @ M	<0.014 M
Chrysene	<0.01 mg/kg	TM218		3 @ #	0.375 @ #	0.444 @ M	0.0284 @ #	0.0231 @ M	<0.01 M
Benzo(b)fluoranthene	<0.015 mg/kg	TM218		4.35 @ #	0.666 @ #	0.728 @ M	0.0303 @ #	0.0258 @ M	<0.015 M
Benzo(k)fluoranthene	<0.014 mg/kg	TM218		1.45 @ #	0.229 @ #	0.231 @ M	<0.014 @ #	<0.014 @ M	<0.014 M
Benzo(a)pyrene	<0.015 mg/kg	TM218		3.39 @ #	0.438 @ #	0.44 @ M	<0.015 @ #	<0.015 @ M	<0.015 M
Indeno(1,2,3-cd)pyrene	<0.018 mg/kg	TM218		2.75 @ #	0.375 @ #	0.416 @ M	<0.018 @ #	<0.018 @ M	<0.018 M
Dibenzo(a,h)anthracene	<0.023 mg/kg	TM218		0.453 @ #	0.0665 @ #	0.0586 @ M	<0.023 @ #	<0.023 @ M	<0.023 M
Benzo(g,h,i)perylene	<0.024 mg/kg	TM218		2.68 @ #	0.356 @ #	0.37 @ M	<0.024 @ #	<0.024 @ M	<0.024 M
PAH, Total Detected USEPA 16	<0.118 mg/kg	TM218		53	6.33	5.16	7.22	2.55	<0.118

Validated

CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-3+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	WSBP108	WSBP109	WSBP109	WSBP109		
			Depth (m)	3.40 - 4.00	0.30 - 0.30	1.00 - 1.00	1.60 - 1.60		
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)		
			Date Sampled	20/08/2019	21/08/2019	21/08/2019	21/08/2019		
			Sample Time	00:00	00:00	00:00	00:00		
			Date Received	28/08/2019	28/08/2019	28/08/2019	28/08/2019		
			SDG Ref	190828-36	190828-36	190828-36	190828-36		
			Lab Sample No.(s)	20598778	20598625	20598767	20598871		
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		83.1	92.4	84.7	81.9		
Acenaphthene-d10 % recovery**	%	TM218		84.6	90	86.3	82.6		
Phenanthrene-d10 % recovery**	%	TM218		84.8	86	81.9	84.3		
Chrysene-d12 % recovery**	%	TM218		75.7	79.2	74.9	78.3		
Perylene-d12 % recovery**	%	TM218		73.2	81.1	71.7	77.4		
Naphthalene	<0.009 mg/kg	TM218		<0.009 M	0.105 @ M	29 @ #	13.1 M		
Acenaphthylene	<0.012 mg/kg	TM218		<0.012 M	<0.06 @ M	<0.06 @ #	<0.012 M		
Acenaphthene	<0.008 mg/kg	TM218		<0.008 M	<0.04 @ M	0.19 @ #	<0.008 M		
Fluorene	<0.01 mg/kg	TM218		<0.01 M	<0.05 @ M	0.124 @ #	<0.01 M		
Phenanthrene	<0.015 mg/kg	TM218		<0.015 M	0.195 @ M	0.186 @ #	<0.015 M		
Anthracene	<0.016 mg/kg	TM218		<0.016 M	<0.08 @ M	<0.08 @ #	<0.016 M		
Fluoranthene	<0.017 mg/kg	TM218		<0.017 M	0.499 @ M	<0.085 @ #	<0.017 M		
Pyrene	<0.015 mg/kg	TM218		<0.015 M	0.399 @ M	<0.075 @ #	<0.015 M		
Benz(a)anthracene	<0.014 mg/kg	TM218		<0.014 M	0.267 @ M	<0.07 @ #	<0.014 M		
Chrysene	<0.01 mg/kg	TM218		<0.01 M	0.313 @ M	<0.05 @ #	<0.01 M		
Benzo(b)fluoranthene	<0.015 mg/kg	TM218		<0.015 M	0.658 @ M	<0.075 @ #	<0.015 M		
Benzo(k)fluoranthene	<0.014 mg/kg	TM218		<0.014 M	0.236 @ M	<0.07 @ #	<0.014 M		
Benzo(a)pyrene	<0.015 mg/kg	TM218		<0.015 M	0.272 @ M	<0.075 @ #	<0.015 M		
Indeno(1,2,3-cd)pyrene	<0.018 mg/kg	TM218		<0.018 M	0.421 @ M	<0.09 @ #	<0.018 M		
Dibenzo(a,h)anthracene	<0.023 mg/kg	TM218		<0.023 M	<0.115 @ M	<0.115 @ #	<0.023 M		
Benzo(g,h,i)perylene	<0.024 mg/kg	TM218		<0.024 M	0.415 @ M	<0.12 @ #	<0.024 M		
PAH, Total Detected USEPA 16	<0.118 mg/kg	TM218		<0.118	3.78	29.5	13.1		

Validated

CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

TPH CWG (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-3+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	BHCP105	BHCP105	BHCP105	CPB5	CPB5	CPB5
			Depth (m)	0.30 - 0.30	0.50 - 0.50	1.00 - 1.00	4.00 - 4.00	7.80 - 7.80	8.70 - 8.70
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	20/08/2019	20/08/2019	20/08/2019	22/08/2019	22/08/2019	22/08/2019
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	28/08/2019	28/08/2019	28/08/2019	28/08/2019	28/08/2019	28/08/2019
			SDG Ref	190828-36	190828-36	190828-36	190828-36	190828-36	190828-36
			Lab Sample No.(s)	20598637	20598655	20598666	20598446	20598438	20598427
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		97.1 @	102 @	101 @	109 @	86.1 @	99.7 @
GRO TOT (Moisture Corrected)	<0.1 mg/kg	TM089		2.64 @ M	28.7 @ M	19.8 @ M	<0.2 @ M	<0.2 @ M	<0.2 @ M
Aliphatics >C5-C6	<0.01 mg/kg	TM089		<0.1 @	<0.02 @	<0.02 @	<0.02 @	<0.02 @	<0.02 @
Aliphatics >C6-C8	<0.01 mg/kg	TM089		0.108 @	0.0594 @	0.0511 @	<0.02 @	<0.02 @	<0.02 @
Aliphatics >C8-C10	<0.01 mg/kg	TM089		0.285 @	1.52 @	1.07 @	<0.02 @	<0.02 @	<0.02 @
Aliphatics >C10-C12	<0.01 mg/kg	TM089		1.08 @	15.5 @	10.6 @	<0.02 @	<0.02 @	<0.02 @
Aliphatics >C12-C16	<0.1 mg/kg	TM173		4.34	257	302	<0.1	<0.1	<0.1
Aliphatics >C16-C21	<0.1 mg/kg	TM173		13.2	330	368	<0.1	7.44	<0.1
Aliphatics >C21-C35	<0.1 mg/kg	TM173		55.1	425	456	<0.1	22.9	<0.1
Aliphatics >C35-C44	<0.1 mg/kg	TM173		49.9	57.2	79.3	<0.1	<0.1	<0.1
Total Aliphatics >C12-C44	<0.1 mg/kg	TM173		123	1070	1200	<0.1	30.3	<0.1
Aromatics >EC5-EC7	<0.01 mg/kg	TM089		<0.1 @	0.103 @	0.0805 @	<0.02 @	<0.02 @	<0.02 @
Aromatics >EC7-EC8	<0.01 mg/kg	TM089		0.143 @	0.125 @	0.104 @	<0.02 @	<0.02 @	<0.02 @
Aromatics >EC8-EC10	<0.01 mg/kg	TM089		0.19 @	1.01 @	0.715 @	<0.02 @	<0.02 @	<0.02 @
Aromatics >EC10-EC12	<0.01 mg/kg	TM089		0.724 @	10.3 @	7.1 @	<0.02 @	<0.02 @	<0.02 @
Aromatics >EC12-EC16	<0.1 mg/kg	TM173		3.84	80.4	81	<0.1	<0.1	<0.1
Aromatics >EC16-EC21	<0.1 mg/kg	TM173		15	144	135	<0.1	3.79	<0.1
Aromatics >EC21-EC35	<0.1 mg/kg	TM173		73.9	172	147	4.4	62.2	<0.1
Aromatics >EC35-EC44	<0.1 mg/kg	TM173		107	41.5	35.3	<0.1	20.5	<0.1
Aromatics >EC40-EC44	<0.1 mg/kg	TM173		52.1	14.6	12.2	<0.1	3.88	<0.1
Total Aromatics >EC12-EC44	<0.1 mg/kg	TM173		199	438	399	4.4	86.4	<0.1
Total Aliphatics & Aromatics >C5-C44	<0.1 mg/kg	TM173		324	1540	1620	4.4	117	<0.1

Validated

CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

TPH CWG (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-3+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	CPB7	CPB7	CPB7	CPB9	CPB9	CPB9
			Depth (m)	2.70 - 2.70	4.70 - 4.70	6.60 - 6.60	3.50 - 3.50	6.50 - 6.50	7.60 - 7.60
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	21/08/2019	21/08/2019	21/08/2019	19/08/2019	19/08/2019	19/08/2019
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	28/08/2019	28/08/2019	28/08/2019	28/08/2019	28/08/2019	28/08/2019
			SDG Ref	190828-36	190828-36	190828-36	190828-36	190828-36	190828-36
			Lab Sample No.(s)	20598824	20598832	20598839	20598847	20598859	20598882
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		84 @	110 @	109 @	88.2 @	70.1 @	89.4 @
GRO TOT (Moisture Corrected)	<0.1 mg/kg	TM089		0.677 @ M	<0.2 @ M	0.663 @ M	<0.2 @ M	<0.2 @ M	<0.2 @ M
Aliphatics >C5-C6	<0.01 mg/kg	TM089		0.0276 @	<0.02 @	0.0364 @	<0.02 @	<0.02 @	<0.02 @
Aliphatics >C6-C8	<0.01 mg/kg	TM089		0.0957 @	<0.02 @	0.0754 @	<0.02 @	<0.02 @	<0.02 @
Aliphatics >C8-C10	<0.01 mg/kg	TM089		0.149 @	<0.02 @	0.231 @	<0.02 @	<0.02 @	<0.02 @
Aliphatics >C10-C12	<0.01 mg/kg	TM089		0.182 @	<0.02 @	0.0988 @	<0.02 @	<0.02 @	<0.02 @
Aliphatics >C12-C16	<0.1 mg/kg	TM173		9.72	<0.1	<0.1	2.43	<0.1	<0.1
Aliphatics >C16-C21	<0.1 mg/kg	TM173		32.9	<0.1	<0.1	19	2.14	<0.1
Aliphatics >C21-C35	<0.1 mg/kg	TM173		75.5	<0.1	14.7	27	7.85	4.78
Aliphatics >C35-C44	<0.1 mg/kg	TM173		6.22	<0.1	<0.1	4.06	2.5	<0.1
Total Aliphatics >C12-C44	<0.1 mg/kg	TM173		124	<0.1	14.7	52.6	12.5	4.78
Aromatics >EC5-EC7	<0.01 mg/kg	TM089		<0.02 @	<0.02 @	<0.02 @	<0.02 @	<0.02 @	<0.02 @
Aromatics >EC7-EC8	<0.01 mg/kg	TM089		<0.02 @	<0.02 @	<0.02 @	<0.02 @	<0.02 @	<0.02 @
Aromatics >EC8-EC10	<0.01 mg/kg	TM089		0.0994 @	<0.02 @	0.153 @	<0.02 @	<0.02 @	<0.02 @
Aromatics >EC10-EC12	<0.01 mg/kg	TM089		0.121 @	<0.02 @	0.0676 @	<0.02 @	<0.02 @	<0.02 @
Aromatics >EC12-EC16	<0.1 mg/kg	TM173		3.86	<0.1	<0.1	5.29	<0.1	1.96
Aromatics >EC16-EC21	<0.1 mg/kg	TM173		20.5	<0.1	2.87	56	<0.1	11.2
Aromatics >EC21-EC35	<0.1 mg/kg	TM173		149	1.32	43	166	73.4	21.8
Aromatics >EC35-EC44	<0.1 mg/kg	TM173		25.7	<0.1	8.61	29.3	13.1	6.76
Aromatics >EC40-EC44	<0.1 mg/kg	TM173		6.29	<0.1	2.37	9.63	3.94	2.78
Total Aromatics >EC12-EC44	<0.1 mg/kg	TM173		199	1.32	54.5	256	86.5	41.7
Total Aliphatics & Aromatics >C5-C44	<0.1 mg/kg	TM173		324	1.58	70.6	309	99	46.5

CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

TPH CWG (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-3+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	CPB9	CPB11	CPB11	CPB11	CPB13	CPB13
			Depth (m)	8.60 - 8.60	3.50 - 3.50	5.50 - 5.50	9.50 - 9.50	10.10 - 10.10	2.20 - 2.20
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	19/08/2019	20/08/2019	20/08/2019	20/08/2019	22/08/2019	22/08/2019
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	28/08/2019	28/08/2019	28/08/2019	28/08/2019	28/08/2019	28/08/2019
			SDG Ref	190828-36	190828-36	190828-36	190828-36	190828-36	190828-36
			Lab Sample No.(s)	20598896	20598788	20598798	20598808	20598531	20598492
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		111 @	82 @	105 @	99.1 @	130 @	119 @
GRO TOT (Moisture Corrected)	<0.1 mg/kg	TM089		<0.2 @ M	<0.2 @ M	<0.2 @ M	<0.2 @ M	<0.2 @ M	<0.2 @ M
Aliphatics >C5-C6	<0.01 mg/kg	TM089		<0.02 @	<0.02 @	<0.02 @	<0.02 @	<0.02 @	<0.02 @
Aliphatics >C6-C8	<0.01 mg/kg	TM089		<0.02 @	<0.02 @	<0.02 @	<0.02 @	<0.02 @	<0.02 @
Aliphatics >C8-C10	<0.01 mg/kg	TM089		<0.02 @	<0.02 @	<0.02 @	<0.02 @	<0.02 @	<0.02 @
Aliphatics >C10-C12	<0.01 mg/kg	TM089		<0.02 @	<0.02 @	<0.02 @	<0.02 @	<0.02 @	<0.02 @
Aliphatics >C12-C16	<0.1 mg/kg	TM173		<0.1	0.869	<0.1	<0.1	<0.1	<0.1
Aliphatics >C16-C21	<0.1 mg/kg	TM173		<0.1	15.4	<0.1	8.29	<0.1	<0.1
Aliphatics >C21-C35	<0.1 mg/kg	TM173		<0.1	16.4	<0.1	7.24	<0.1	6.76
Aliphatics >C35-C44	<0.1 mg/kg	TM173		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Total Aliphatics >C12-C44	<0.1 mg/kg	TM173		<0.1	32.7	<0.1	15.5	<0.1	6.76
Aromatics >EC5-EC7	<0.01 mg/kg	TM089		<0.02 @	<0.02 @	<0.02 @	<0.02 @	<0.02 @	<0.02 @
Aromatics >EC7-EC8	<0.01 mg/kg	TM089		<0.02 @	<0.02 @	<0.02 @	<0.02 @	<0.02 @	<0.02 @
Aromatics >EC8-EC10	<0.01 mg/kg	TM089		<0.02 @	<0.02 @	<0.02 @	<0.02 @	<0.02 @	<0.02 @
Aromatics >EC10-EC12	<0.01 mg/kg	TM089		<0.02 @	<0.02 @	<0.02 @	<0.02 @	<0.02 @	<0.02 @
Aromatics >EC12-EC16	<0.1 mg/kg	TM173		<0.1	1.87	<0.1	0.474	<0.1	<0.1
Aromatics >EC16-EC21	<0.1 mg/kg	TM173		0.291	21.5	<0.1	3.64	<0.1	<0.1
Aromatics >EC21-EC35	<0.1 mg/kg	TM173		1.24	89.7	4.5	6.5	<0.1	9.41
Aromatics >EC35-EC44	<0.1 mg/kg	TM173		<0.1	15.6	<0.1	1.43	<0.1	0.341
Aromatics >EC40-EC44	<0.1 mg/kg	TM173		<0.1	5.64	<0.1	0.566	<0.1	<0.1
Total Aromatics >EC12-EC44	<0.1 mg/kg	TM173		1.53	129	4.5	12	<0.1	9.75
Total Aliphatics & Aromatics >C5-C44	<0.1 mg/kg	TM173		1.53	161	4.5	27.6	<0.1	16.5

Validated

CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

TPH CWG (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-3+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	CPB13	CPB18	CPB18	CPB18	CPBP101	CPBP101
			Depth (m)	4.20 - 4.20	0.30 - 0.30	0.50 - 0.50	1.90 - 1.90	0.30 - 0.30	1.00 - 1.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	22/08/2019	21/08/2019	21/08/2019	21/08/2019	20/08/2019	20/08/2019
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	28/08/2019	28/08/2019	28/08/2019	28/08/2019	28/08/2019	28/08/2019
			SDG Ref	190828-36	190828-36	190828-36	190828-36	190828-36	190828-36
			Lab Sample No.(s)	20598466	20598207	20598340	20598478	20598715	20598729
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		94.1 @	59.8 @	57.9 @	97 @	92 @	77 @
GRO TOT (Moisture Corrected)	<0.1 mg/kg	TM089		<0.2 @ M	0.576 @ #	0.618 @ #	1.42 @ M	4.54 @ M	48.6 @ M
Aliphatics >C5-C6	<0.01 mg/kg	TM089		<0.02 @	<0.02 @	<0.02 @	0.0456 @	0.0223 @	0.0209 @
Aliphatics >C6-C8	<0.01 mg/kg	TM089		<0.02 @	0.0254 @	0.0325 @	0.119 @	0.0797 @	0.262 @
Aliphatics >C8-C10	<0.01 mg/kg	TM089		<0.02 @	0.121 @	0.135 @	0.398 @	0.355 @	6.09 @
Aliphatics >C10-C12	<0.01 mg/kg	TM089		<0.02 @	0.0932 @	0.111 @	0.19 @	2.24 @	22.7 @
Aliphatics >C12-C16	<0.1 mg/kg	TM173		<0.1	8.44	4.59	1.66	253	482
Aliphatics >C16-C21	<0.1 mg/kg	TM173		<0.1	41	75.3	5.01	494	670
Aliphatics >C21-C35	<0.1 mg/kg	TM173		5.02	62.5	91.4	21.9	1860	1990
Aliphatics >C35-C44	<0.1 mg/kg	TM173		<0.1	28.8	16.6	5.61	358	224
Total Aliphatics >C12-C44	<0.1 mg/kg	TM173		5.02	141	188	34.2	2960	3370
Aromatics >EC5-EC7	<0.01 mg/kg	TM089		<0.02 @	0.149 @	0.131 @	0.23 @	0.0787 @	0.304 @
Aromatics >EC7-EC8	<0.01 mg/kg	TM089		<0.02 @	0.0315 @	0.0288 @	0.0389 @	0.0319 @	0.0902 @
Aromatics >EC8-EC10	<0.01 mg/kg	TM089		<0.02 @	0.0799 @	0.09 @	0.265 @	0.237 @	4.06 @
Aromatics >EC10-EC12	<0.01 mg/kg	TM089		<0.02 @	0.0617 @	0.075 @	0.127 @	1.5 @	15.1 @
Aromatics >EC12-EC16	<0.1 mg/kg	TM173		<0.1	6.8	11.4	1.47	47	152
Aromatics >EC16-EC21	<0.1 mg/kg	TM173		<0.1	36.6	83.6	4.9	171	285
Aromatics >EC21-EC35	<0.1 mg/kg	TM173		9.36	111	179	39.7	383	615
Aromatics >EC35-EC44	<0.1 mg/kg	TM173		<0.1	69.3	52.1	10.3	210	143
Aromatics >EC40-EC44	<0.1 mg/kg	TM173		<0.1	33.1	21.6	3.75	93.5	47.5
Total Aromatics >EC12-EC44	<0.1 mg/kg	TM173		9.36	224	326	56.3	811	1190
Total Aliphatics & Aromatics >C5-C44	<0.1 mg/kg	TM173		14.4	365	515	91.9	3780	4610

Validated

CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

TPH CWG (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-3+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	CPBP101	CPBR3	CPBR3	CPBR3	CPBR3	CPBR4
			Depth (m)	1.50 - 1.50	3.40 - 3.40	4.80 - 4.80	7.40 - 7.40	9.10 - 9.10	2.50 - 2.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	20/08/2019	20/08/2019	20/08/2019	20/08/2019	20/08/2019	21/08/2019
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	28/08/2019	28/08/2019	28/08/2019	28/08/2019	28/08/2019	28/08/2019
			SDG Ref	190828-36	190828-36	190828-36	190828-36	190828-36	190828-36
			Lab Sample No.(s)	20598741	20598911	20598922	20598930	20598817	20598217
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		80 @	100 @	87.3 @	95.4 @	94.7	74 @
GRO TOT (Moisture Corrected)	<0.1 mg/kg	TM089		37.7 @ M	1.16 @ M	<0.2 @ M	<0.2 @ M	<0.2 M	1.94 @ M
Aliphatics >C5-C6	<0.01 mg/kg	TM089		0.0225 @	0.0352 @	<0.02 @	<0.02 @	<0.02	0.0459 @
Aliphatics >C6-C8	<0.01 mg/kg	TM089		0.228 @	0.099 @	<0.02 @	<0.02 @	<0.02	0.136 @
Aliphatics >C8-C10	<0.01 mg/kg	TM089		4.34 @	0.165 @	<0.02 @	<0.02 @	<0.02	0.379 @
Aliphatics >C10-C12	<0.01 mg/kg	TM089		17.8 @	0.418 @	<0.02 @	<0.02 @	<0.02	0.675 @
Aliphatics >C12-C16	<0.1 mg/kg	TM173		538	40.8	16.5	<0.1	<0.1	<0.1
Aliphatics >C16-C21	<0.1 mg/kg	TM173		714	449	204	1.96	<0.1	<0.1
Aliphatics >C21-C35	<0.1 mg/kg	TM173		2080	148	146	7.19	<0.1	13.4
Aliphatics >C35-C44	<0.1 mg/kg	TM173		224	7.07	7.94	0.308	<0.1	<0.1
Total Aliphatics >C12-C44	<0.1 mg/kg	TM173		3560	645	375	9.46	<0.1	13.4
Aromatics >EC5-EC7	<0.01 mg/kg	TM089		0.367 @	0.0286 @	<0.02 @	<0.02 @	<0.02	<0.02 @
Aromatics >EC7-EC8	<0.01 mg/kg	TM089		0.091 @	0.022 @	<0.02 @	<0.02 @	<0.02	<0.02 @
Aromatics >EC8-EC10	<0.01 mg/kg	TM089		2.89 @	0.11 @	<0.02 @	<0.02 @	<0.02	0.253 @
Aromatics >EC10-EC12	<0.01 mg/kg	TM089		11.9 @	0.279 @	<0.02 @	<0.02 @	<0.02	0.451 @
Aromatics >EC12-EC16	<0.1 mg/kg	TM173		215	10.6	4.28	<0.1	<0.1	<0.1
Aromatics >EC16-EC21	<0.1 mg/kg	TM173		461	138	60.5	1.44	<0.1	4.1
Aromatics >EC21-EC35	<0.1 mg/kg	TM173		1060	245	242	27.3	<0.1	76
Aromatics >EC35-EC44	<0.1 mg/kg	TM173		256	36.9	35.8	4.17	<0.1	13.9
Aromatics >EC40-EC44	<0.1 mg/kg	TM173		84.4	9.73	8.71	<0.1	<0.1	4.32
Total Aromatics >EC12-EC44	<0.1 mg/kg	TM173		1990	430	342	32.9	<0.1	94
Total Aliphatics & Aromatics >C5-C44	<0.1 mg/kg	TM173		5590	1080	718	42.3	<0.1	109

Validated

CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

TPH CWG (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-3+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	CPBR4	CPBR4	CPBR4	CPBR9	CPBR9	CPBR9
			Depth (m)	3.50 - 3.50	7.50 - 7.50	9.40 - 9.40	3.10 - 3.10	4.20 - 4.20	8.80 - 8.80
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	21/08/2019	21/08/2019	21/08/2019	21/08/2019	21/08/2019	21/08/2019
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	28/08/2019	28/08/2019	28/08/2019	28/08/2019	28/08/2019	28/08/2019
			SDG Ref	190828-36	190828-36	190828-36	190828-36	190828-36	190828-36
			Lab Sample No.(s)	20598227	20598239	20598248	20598939	20598946	20598956
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		106 @	89.5 @	101 @	92.5 @	112 @	120 @
GRO TOT (Moisture Corrected)	<0.1 mg/kg	TM089		<0.2 @ M	<0.2 @ M	<0.2 @ M	<0.2 @ M	<0.2 @ M	<0.2 @ M
Aliphatics >C5-C6	<0.01 mg/kg	TM089		<0.02 @	<0.02 @	<0.02 @	<0.02 @	<0.02 @	<0.02 @
Aliphatics >C6-C8	<0.01 mg/kg	TM089		<0.02 @	<0.02 @	<0.02 @	<0.02 @	<0.02 @	<0.02 @
Aliphatics >C8-C10	<0.01 mg/kg	TM089		<0.02 @	<0.02 @	<0.02 @	<0.02 @	<0.02 @	<0.02 @
Aliphatics >C10-C12	<0.01 mg/kg	TM089		<0.02 @	<0.02 @	<0.02 @	<0.02 @	<0.02 @	<0.02 @
Aliphatics >C12-C16	<0.1 mg/kg	TM173		<0.1	0.62	<0.1	<0.1	<0.1	<0.1
Aliphatics >C16-C21	<0.1 mg/kg	TM173		3.19	7.09	<0.1	<0.1	<0.1	<0.1
Aliphatics >C21-C35	<0.1 mg/kg	TM173		18.5	31.1	<0.1	5.26	<0.1	9.79
Aliphatics >C35-C44	<0.1 mg/kg	TM173		<0.1	1.39	<0.1	<0.1	<0.1	1.48
Total Aliphatics >C12-C44	<0.1 mg/kg	TM173		21.6	40.2	<0.1	5.26	<0.1	11.3
Aromatics >EC5-EC7	<0.01 mg/kg	TM089		<0.02 @	<0.02 @	<0.02 @	<0.02 @	<0.02 @	<0.02 @
Aromatics >EC7-EC8	<0.01 mg/kg	TM089		<0.02 @	<0.02 @	<0.02 @	<0.02 @	<0.02 @	<0.02 @
Aromatics >EC8-EC10	<0.01 mg/kg	TM089		<0.02 @	<0.02 @	<0.02 @	<0.02 @	<0.02 @	<0.02 @
Aromatics >EC10-EC12	<0.01 mg/kg	TM089		<0.02 @	<0.02 @	<0.02 @	<0.02 @	<0.02 @	<0.02 @
Aromatics >EC12-EC16	<0.1 mg/kg	TM173		2.95	<0.1	<0.1	<0.1	<0.1	<0.1
Aromatics >EC16-EC21	<0.1 mg/kg	TM173		12.6	6.15	0.399	<0.1	<0.1	<0.1
Aromatics >EC21-EC35	<0.1 mg/kg	TM173		108	113	3.06	37	3.59	4.95
Aromatics >EC35-EC44	<0.1 mg/kg	TM173		11.6	31.8	1.85	2.74	<0.1	0.993
Aromatics >EC40-EC44	<0.1 mg/kg	TM173		<0.1	7.15	0.651	<0.1	<0.1	<0.1
Total Aromatics >EC12-EC44	<0.1 mg/kg	TM173		135	151	5.31	39.7	3.59	5.95
Total Aliphatics & Aromatics >C5-C44	<0.1 mg/kg	TM173		157	191	5.31	45	3.59	17.2

Validated

CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

TPH CWG (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-3+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	WS01	WS01	WS04	WS04	WS04	WS13
			Depth (m)	0.30 - 0.30	0.50 - 0.50	0.30 - 0.30	1.00 - 1.00	3.40 - 3.80	0.30 - 0.30
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	22/08/2019	22/08/2019	22/08/2019	22/08/2019	22/08/2019	22/08/2019
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	28/08/2019	28/08/2019	28/08/2019	28/08/2019	28/08/2019	28/08/2019
			SDG Ref	190828-36	190828-36	190828-36	190828-36	190828-36	190828-36
			Lab Sample No.(s)	20598388	20598407	20598362	20598372	20598505	20598264
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		39 3 @	39 3 @	73.9 @	92.8 @	75 @	59.3 3
GRO TOT (Moisture Corrected)	<0.1 mg/kg	TM089		0.337 3 @ #	0.665 3 @ #	0.738 @ M	41.3 @ M	<0.2 @ M	<0.2 3 #
Aliphatics >C5-C6	<0.01 mg/kg	TM089		<0.01 3 @	<0.01 3 @	0.0275 @	<0.02 @	<0.02 @	<0.02 3
Aliphatics >C6-C8	<0.01 mg/kg	TM089		0.0178 3 @	0.0334 3 @	0.0825 @	0.0752 @	<0.02 @	<0.02 3
Aliphatics >C8-C10	<0.01 mg/kg	TM089		0.03 3 @	0.0633 3 @	0.111 @	0.966 @	<0.02 @	<0.02 3
Aliphatics >C10-C12	<0.01 mg/kg	TM089		0.149 3 @	0.296 3 @	0.235 @	23.7 @	<0.02 @	<0.02 3
Aliphatics >C12-C16	<0.1 mg/kg	TM173		12.7	2.01	3.9	167	<0.1	1.34
Aliphatics >C16-C21	<0.1 mg/kg	TM173		99.1	35.5	14.5	254	<0.1	13.3
Aliphatics >C21-C35	<0.1 mg/kg	TM173		87.4	52.2	90	186	38.1	75.9
Aliphatics >C35-C44	<0.1 mg/kg	TM173		14.9	6.48	31	51.4	<0.1	26.6
Total Aliphatics >C12-C44	<0.1 mg/kg	TM173		214	96.2	140	659	38.1	117
Aromatics >EC5-EC7	<0.01 mg/kg	TM089		<0.01 3 @	0.015 3 @	0.022 @	0.0889 @	<0.02 @	<0.02 3
Aromatics >EC7-EC8	<0.01 mg/kg	TM089		<0.01 3 @	0.0104 3 @	0.0286 @	0.0262 @	<0.02 @	<0.02 3
Aromatics >EC8-EC10	<0.01 mg/kg	TM089		0.02 3 @	0.0426 3 @	0.0737 @	0.643 @	<0.02 @	<0.02 3
Aromatics >EC10-EC12	<0.01 mg/kg	TM089		0.0988 3 @	0.197 3 @	0.157 @	15.8 @	<0.02 @	<0.02 3
Aromatics >EC12-EC16	<0.1 mg/kg	TM173		144	85.7	5.51	66.7	2.11	6.07
Aromatics >EC16-EC21	<0.1 mg/kg	TM173		1110	568	30.9	320	8.97	70.2
Aromatics >EC21-EC35	<0.1 mg/kg	TM173		2040	1040	110	302	312	225
Aromatics >EC35-EC44	<0.1 mg/kg	TM173		487	252	59.5	97.6	23.5	69.1
Aromatics >EC40-EC44	<0.1 mg/kg	TM173		160	83.1	24.5	32.2	7.05	24.3
Total Aromatics >EC12-EC44	<0.1 mg/kg	TM173		3780	1940	206	786	347	370
Total Aliphatics & Aromatics >C5-C44	<0.1 mg/kg	TM173		4000	2040	346	1490	385	487

Validated

CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

TPH CWG (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-3+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	WS13	WS13	WS13	WS19	WS19	WS19
			Depth (m)	0.50 - 0.50	1.00 - 1.00	1.80 - 1.80	0.30 - 0.30	1.00 - 1.00	1.80 - 1.80
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	22/08/2019	22/08/2019	22/08/2019	22/08/2019	22/08/2019	22/08/2019
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	28/08/2019	28/08/2019	28/08/2019	28/08/2019	28/08/2019	28/08/2019
			SDG Ref	190828-36	190828-36	190828-36	190828-36	190828-36	190828-36
			Lab Sample No.(s)	20598278	20598286	20598295	20598310	20598327	20598351
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		81.8 @	98.4 @	104	97 @	88 @	105 @
GRO TOT (Moisture Corrected)	<0.1 mg/kg	TM089		<0.2 @ M	4.46 @ #	<0.2 M	0.36 @ M	0.897 @ M	<0.2 @ M
Aliphatics >C5-C6	<0.01 mg/kg	TM089		<0.02 @	0.022 @	<0.02	<0.02 @	<0.02 @	<0.02 @
Aliphatics >C6-C8	<0.01 mg/kg	TM089		<0.02 @	0.137 @	0.0239	0.0299 @	0.0616 @	<0.02 @
Aliphatics >C8-C10	<0.01 mg/kg	TM089		<0.02 @	0.422 @	0.0299	0.0555 @	0.0759 @	<0.02 @
Aliphatics >C10-C12	<0.01 mg/kg	TM089		<0.02 @	2.09 @	0.0876	0.132 @	0.417 @	<0.02 @
Aliphatics >C12-C16	<0.1 mg/kg	TM173		1.59	117	13	19.2	16	<0.1
Aliphatics >C16-C21	<0.1 mg/kg	TM173		18.1	825	80.6	289	85.3	8.57
Aliphatics >C21-C35	<0.1 mg/kg	TM173		71.2	120	22.9	152	28.2	9.11
Aliphatics >C35-C44	<0.1 mg/kg	TM173		23.1	3.35	2.37	48.5	5.44	<0.1
Total Aliphatics >C12-C44	<0.1 mg/kg	TM173		114	1070	119	509	135	17.7
Aromatics >EC5-EC7	<0.01 mg/kg	TM089		<0.02 @	0.114 @	<0.02	<0.02 @	<0.02 @	<0.02 @
Aromatics >EC7-EC8	<0.01 mg/kg	TM089		<0.02 @	<0.02 @	<0.02	<0.02 @	<0.02 @	<0.02 @
Aromatics >EC8-EC10	<0.01 mg/kg	TM089		<0.02 @	0.282 @	<0.02	0.0373 @	0.0506 @	<0.02 @
Aromatics >EC10-EC12	<0.01 mg/kg	TM089		<0.02 @	1.4 @	0.0577	0.0875 @	0.278 @	<0.02 @
Aromatics >EC12-EC16	<0.1 mg/kg	TM173		5.85	69	4.62	15.3	3.52	<0.1
Aromatics >EC16-EC21	<0.1 mg/kg	TM173		75.6	404	33.8	184	36.2	5.67
Aromatics >EC21-EC35	<0.1 mg/kg	TM173		252	184	96.1	176	65.1	50.5
Aromatics >EC35-EC44	<0.1 mg/kg	TM173		73.1	20.1	9.13	43.6	15.1	7.14
Aromatics >EC40-EC44	<0.1 mg/kg	TM173		25.2	5.84	1.71	14.5	3.79	2.7
Total Aromatics >EC12-EC44	<0.1 mg/kg	TM173		407	678	144	419	120	63.3
Total Aliphatics & Aromatics >C5-C44	<0.1 mg/kg	TM173		521	1750	263	929	256	81

Validated

CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

TPH CWG (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-3+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	WS20	WSBP104	WSBP104	WSBP104	WSBP105	WSBP105
			Depth (m)	1.80 - 1.80	0.30 - 0.30	1.00 - 1.00	1.80 - 1.80	0.30 - 0.30	1.00 - 1.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	22/08/2019	20/08/2019	20/08/2019	20/08/2019	20/08/2019	20/08/2019
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	28/08/2019	28/08/2019	28/08/2019	28/08/2019	28/08/2019	28/08/2019
			SDG Ref	190828-36	190828-36	190828-36	190828-36	190828-36	190828-36
			Lab Sample No.(s)	20598518	20598585	20598597	20598613	20598682	20598696
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		103 @	93.5 @	99.3 @	114 @	82.7 @	97 @
GRO TOT (Moisture Corrected)	<0.1 mg/kg	TM089		<0.2 @ M	<0.2 @ M	5.9 @ #	5.77 @ M	29.5 @ #	9.96 @ #
Aliphatics >C5-C6	<0.01 mg/kg	TM089		<0.02 @	<0.02 @	<0.02 @	0.0424 @	0.157 @	0.03 @
Aliphatics >C6-C8	<0.01 mg/kg	TM089		<0.02 @	<0.02 @	0.0232 @	0.144 @	0.59 @	0.157 @
Aliphatics >C8-C10	<0.01 mg/kg	TM089		<0.02 @	<0.02 @	0.473 @	0.79 @	7.93 @	1.95 @
Aliphatics >C10-C12	<0.01 mg/kg	TM089		<0.02 @	<0.02 @	2.82 @	2.46 @	5.89 @	3.52 @
Aliphatics >C12-C16	<0.1 mg/kg	TM173		<0.1	2.92	226	7.06	27.1	18.8
Aliphatics >C16-C21	<0.1 mg/kg	TM173		<0.1	19.9	424	15.9	75.4	50.7
Aliphatics >C21-C35	<0.1 mg/kg	TM173		<0.1	65.2	210	14	380	249
Aliphatics >C35-C44	<0.1 mg/kg	TM173		<0.1	7.77	28	1.51	73.3	55.9
Total Aliphatics >C12-C44	<0.1 mg/kg	TM173		<0.1	95.8	888	38.5	556	375
Aromatics >EC5-EC7	<0.01 mg/kg	TM089		<0.02 @	<0.02 @	0.0998 @	0.0628 @	3.22 @	0.402 @
Aromatics >EC7-EC8	<0.01 mg/kg	TM089		<0.02 @	<0.02 @	0.278 @	0.102 @	2.46 @	0.243 @
Aromatics >EC8-EC10	<0.01 mg/kg	TM089		<0.02 @	<0.02 @	0.316 @	0.526 @	5.29 @	1.3 @
Aromatics >EC10-EC12	<0.01 mg/kg	TM089		<0.02 @	<0.02 @	1.88 @	1.64 @	3.93 @	2.35 @
Aromatics >EC12-EC16	<0.1 mg/kg	TM173		<0.1	1.33	103	2.01	6.55	6.28
Aromatics >EC16-EC21	<0.1 mg/kg	TM173		<0.1	9.96	167	6.52	31.5	22.1
Aromatics >EC21-EC35	<0.1 mg/kg	TM173		4.12	46.6	155	46.9	112	82.5
Aromatics >EC35-EC44	<0.1 mg/kg	TM173		<0.1	21.3	66	8.26	44.5	47.7
Aromatics >EC40-EC44	<0.1 mg/kg	TM173		<0.1	8.84	27.1	2.37	18.3	21.1
Total Aromatics >EC12-EC44	<0.1 mg/kg	TM173		4.12	79.2	491	63.7	195	159
Total Aliphatics & Aromatics >C5-C44	<0.1 mg/kg	TM173		4.12	175	1380	108	780	543

Validated

CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

TPH CWG (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-3+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	WSBP105	WSBP108	WSBP108	WSBP108	WSBP108	WSBP108
			Depth (m)	1.40 - 1.40	0.30 - 0.30	1.00 - 1.00	1.50 - 1.50	2.10 - 2.50	3.40 - 4.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	20/08/2019	20/08/2019	20/08/2019	20/08/2019	20/08/2019	20/08/2019
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	28/08/2019	28/08/2019	28/08/2019	28/08/2019	28/08/2019	28/08/2019
			SDG Ref	190828-36	190828-36	190828-36	190828-36	190828-36	190828-36
			Lab Sample No.(s)	20598707	20598541	20598552	20598565	20598757	20598778
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		73 @	78 @	95.7 @	117 @	96.8 @	73.7 @
GRO TOT (Moisture Corrected)	<0.1 mg/kg	TM089		43.1 @ #	0.343 @ M	21.4 @ #	30.8 @ M	<0.2 @ M	<0.2 @ M
Aliphatics >C5-C6	<0.01 mg/kg	TM089		0.18 @	<0.02 @	0.138 @	0.0964 @	<0.02 @	<0.02 @
Aliphatics >C6-C8	<0.01 mg/kg	TM089		0.859 @	0.0351 @	0.488 @	0.653 @	0.0275 @	<0.02 @
Aliphatics >C8-C10	<0.01 mg/kg	TM089		11.9 @	0.0373 @	3.34 @	1.86 @	0.0537 @	<0.02 @
Aliphatics >C10-C12	<0.01 mg/kg	TM089		9.91 @	0.128 @	7.43 @	15.8 @	0.0603 @	<0.02 @
Aliphatics >C12-C16	<0.1 mg/kg	TM173		119	1.3	4.74	<0.1	<0.1	<0.1
Aliphatics >C16-C21	<0.1 mg/kg	TM173		270	4.7	2.63	<0.1	<0.1	<0.1
Aliphatics >C21-C35	<0.1 mg/kg	TM173		1320	21.5	2.56	3.31	<0.1	26.3
Aliphatics >C35-C44	<0.1 mg/kg	TM173		194	7.84	0.852	<0.1	<0.1	<0.1
Total Aliphatics >C12-C44	<0.1 mg/kg	TM173		1900	35.4	10.8	3.31	<0.1	26.3
Aromatics >EC5-EC7	<0.01 mg/kg	TM089		3.21 @	<0.02 @	2.67 @	0.534 @	<0.02 @	<0.02 @
Aromatics >EC7-EC8	<0.01 mg/kg	TM089		2.54 @	<0.02 @	0.151 @	<0.02 @	<0.02 @	<0.02 @
Aromatics >EC8-EC10	<0.01 mg/kg	TM089		7.92 @	0.0253 @	2.23 @	1.24 @	0.0354 @	<0.02 @
Aromatics >EC10-EC12	<0.01 mg/kg	TM089		6.61 @	0.0856 @	4.95 @	10.6 @	0.0406 @	<0.02 @
Aromatics >EC12-EC16	<0.1 mg/kg	TM173		35.7	2.17	6.82	<0.1	<0.1	0.219
Aromatics >EC16-EC21	<0.1 mg/kg	TM173		155	10.1	10.3	<0.1	<0.1	6.08
Aromatics >EC21-EC35	<0.1 mg/kg	TM173		411	43.5	18.5	20.1	0.321	139
Aromatics >EC35-EC44	<0.1 mg/kg	TM173		102	20.9	0.689	2	<0.1	31.9
Aromatics >EC40-EC44	<0.1 mg/kg	TM173		36.2	8.73	<0.1	<0.1	<0.1	11
Total Aromatics >EC12-EC44	<0.1 mg/kg	TM173		704	76.7	36.3	22.1	0.321	177
Total Aliphatics & Aromatics >C5-C44	<0.1 mg/kg	TM173		2650	112	68.5	56.2	0.538	204

Validated

CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

TPH CWG (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-3+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	WSBP109	WSBP109	WSBP109			
			Depth (m)	0.30 - 0.30	1.00 - 1.00	1.60 - 1.60			
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)			
			Date Sampled	21/08/2019	21/08/2019	21/08/2019			
			Sample Time	00:00	00:00	00:00			
			Date Received	28/08/2019	28/08/2019	28/08/2019			
			SDG Ref	190828-36	190828-36	190828-36			
			Lab Sample No.(s)	20598625	20598767	20598871			
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		95 @	80 @	96 @			
GRO TOT (Moisture Corrected)	<0.1 mg/kg	TM089		<0.2 @ M	31.4 @ #	25.2 @ M			
Aliphatics >C5-C6	<0.01 mg/kg	TM089		<0.02 @	0.215 @	0.0588 @			
Aliphatics >C6-C8	<0.01 mg/kg	TM089		<0.02 @	0.801 @	0.137 @			
Aliphatics >C8-C10	<0.01 mg/kg	TM089		0.0216 @	5.93 @	4.03 @			
Aliphatics >C10-C12	<0.01 mg/kg	TM089		0.0205 @	11 @	10.8 @			
Aliphatics >C12-C16	<0.1 mg/kg	TM173		0.195	41.9	<0.1			
Aliphatics >C16-C21	<0.1 mg/kg	TM173		0.841	76.8	<0.1			
Aliphatics >C21-C35	<0.1 mg/kg	TM173		97.7	22.5	1.81			
Aliphatics >C35-C44	<0.1 mg/kg	TM173		68.8	0.749	<0.1			
Total Aliphatics >C12-C44	<0.1 mg/kg	TM173		168	142	1.81			
Aromatics >EC5-EC7	<0.01 mg/kg	TM089		<0.02 @	1.99 @	0.306 @			
Aromatics >EC7-EC8	<0.01 mg/kg	TM089		<0.02 @	0.258 @	<0.02 @			
Aromatics >EC8-EC10	<0.01 mg/kg	TM089		<0.02 @	3.95 @	2.69 @			
Aromatics >EC10-EC12	<0.01 mg/kg	TM089		<0.02 @	7.3 @	7.18 @			
Aromatics >EC12-EC16	<0.1 mg/kg	TM173		0.502	89.2	0.637			
Aromatics >EC16-EC21	<0.1 mg/kg	TM173		3.93	153	1.1			
Aromatics >EC21-EC35	<0.1 mg/kg	TM173		125	150	17.6			
Aromatics >EC35-EC44	<0.1 mg/kg	TM173		119	10.8	4.49			
Aromatics >EC40-EC44	<0.1 mg/kg	TM173		49.4	2.81	1.65			
Total Aromatics >EC12-EC44	<0.1 mg/kg	TM173		248	403	23.8			
Total Aliphatics & Aromatics >C5-C44	<0.1 mg/kg	TM173		415	577	50.8			

Validated

CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

VOC MS (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-3+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	BHCP105	BHCP105	BHCP105	CPB5	CPB5	CPB5
			Depth (m)	0.30 - 0.30	0.50 - 0.50	1.00 - 1.00	4.00 - 4.00	7.80 - 7.80	8.70 - 8.70
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	20/08/2019	20/08/2019	20/08/2019	22/08/2019	22/08/2019	22/08/2019
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	28/08/2019	28/08/2019	28/08/2019	28/08/2019	28/08/2019	28/08/2019
			SDG Ref	190828-36	190828-36	190828-36	190828-36	190828-36	190828-36
			Lab Sample No.(s)	20598637	20598655	20598666	20598446	20598438	20598427
			AGS Reference						
Dibromofluoromethane**	%	TM116		106 @	103 @	102 @	111 @	119 @	113 @
Toluene-d8**	%	TM116		98.1 @	96.6 @	98.5 @	98.9 @	95.4 @	99.9 @
4-Bromofluorobenzene**	%	TM116		96.7 @	95.1 @	96.3 @	92.2 @	83.5 @	101 @
Methyl Tertiary Butyl Ether	<0.01 mg/kg	TM116		<0.1 @ M	<0.1 @ M	<0.1 @ M	<0.1 @ M	<0.1 @ M	<0.1 @ M
Benzene	<0.009 mg/kg	TM116		<0.09 @ M	<0.09 @ M	<0.09 @ M	<0.09 @ M	<0.09 @ M	<0.09 @ M
Toluene	<0.007 mg/kg	TM116		0.197 @ M	0.0798 @ M	0.136 @ M	<0.07 @ M	<0.07 @ M	<0.07 @ M
Ethylbenzene	<0.004 mg/kg	TM116		<0.04 @ M	<0.04 @ M	<0.04 @ M	<0.04 @ M	<0.04 @ M	<0.04 @ M
p/m-Xylene	<0.01 mg/kg	TM116		<0.1 @ #	<0.1 @ #	<0.1 @ #	<0.1 @ #	<0.1 @ #	<0.1 @ #
o-Xylene	<0.01 mg/kg	TM116		<0.1 @ M	<0.1 @ M	<0.1 @ M	<0.1 @ M	<0.1 @ M	<0.1 @ M
Sum of Detected Xylenes	<0.02 mg/kg	TM116		<0.2 @	<0.2 @	<0.2 @	<0.2 @	<0.2 @	<0.2 @
Sum of BTEX	<0.04 mg/kg	TM116		<0.4 @	<0.4 @	<0.4 @	<0.4 @	<0.4 @	<0.4 @

Validated

CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

VOC MS (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-3+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	CPB7	CPB7	CPB7	CPB9	CPB9	CPB9
			Depth (m)	2.70 - 2.70	4.70 - 4.70	6.60 - 6.60	3.50 - 3.50	6.50 - 6.50	7.60 - 7.60
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	21/08/2019	21/08/2019	21/08/2019	19/08/2019	19/08/2019	19/08/2019
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	28/08/2019	28/08/2019	28/08/2019	28/08/2019	28/08/2019	28/08/2019
			SDG Ref	190828-36	190828-36	190828-36	190828-36	190828-36	190828-36
			Lab Sample No.(s)	20598824	20598832	20598839	20598847	20598859	20598882
			AGS Reference						
Dibromofluoromethane**	%	TM116		108 @	108 @	110 @	121 @	117 @	115 @
Toluene-d8**	%	TM116		90.2 @	96 @	88.6 @	93 @	88.7 @	97.5 @
4-Bromofluorobenzene**	%	TM116		74.5 @	92.6 @	72.7 @	80.3 @	72.3 @	89.4 @
Methyl Tertiary Butyl Ether	<0.01 mg/kg	TM116		<0.1 @ M	<0.1 @ M	<0.1 @ M	<0.1 @ M	<0.1 @ M	<0.1 @ M
Benzene	<0.009 mg/kg	TM116		<0.09 @ M	<0.09 @ M	<0.09 @ M	<0.09 @ M	<0.09 @ M	<0.09 @ M
Toluene	<0.007 mg/kg	TM116		<0.07 @ M	<0.07 @ M	<0.07 @ M	<0.07 @ M	<0.07 @ M	<0.07 @ M
Ethylbenzene	<0.004 mg/kg	TM116		<0.04 @ M	<0.04 @ M	<0.04 @ M	<0.04 @ M	<0.04 @ M	<0.04 @ M
p/m-Xylene	<0.01 mg/kg	TM116		<0.1 @ #	<0.1 @ #	<0.1 @ #	<0.1 @ #	<0.1 @ #	<0.1 @ #
o-Xylene	<0.01 mg/kg	TM116		<0.1 @ M	<0.1 @ M	<0.1 @ M	<0.1 @ M	<0.1 @ M	<0.1 @ M
Sum of Detected Xylenes	<0.02 mg/kg	TM116		<0.2 @	<0.2 @	<0.2 @	<0.2 @	<0.2 @	<0.2 @
Sum of BTEX	<0.04 mg/kg	TM116		<0.4 @	<0.4 @	<0.4 @	<0.4 @	<0.4 @	<0.4 @

Validated

CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

VOC MS (S)

Results Legend	
#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-3+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	CPB9	CPB11	CPB11	CPB11	CPB13	CPB13
			Depth (m)	8.60 - 8.60	3.50 - 3.50	5.50 - 5.50	9.50 - 9.50	10.10 - 10.10	2.20 - 2.20
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	19/08/2019	20/08/2019	20/08/2019	20/08/2019	22/08/2019	22/08/2019
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	28/08/2019	28/08/2019	28/08/2019	28/08/2019	28/08/2019	28/08/2019
			SDG Ref	190828-36	190828-36	190828-36	190828-36	190828-36	190828-36
			Lab Sample No.(s)	20598896	20598788	20598798	20598808	20598531	20598492
			AGS Reference						
Dibromofluoromethane**	%	TM116		121 @	109 @	111 @	119 @	138 @	109 @
Toluene-d8**	%	TM116		97.6 @	96.8 @	98.3 @	98.6 @	97.1 @	98.4 @
4-Bromofluorobenzene**	%	TM116		95.8 @	91.7 @	95.9 @	98.3 @	101 @	96.4 @
Methyl Tertiary Butyl Ether	<0.01 mg/kg	TM116		<0.1 @ M	<0.1 @ M	<0.1 @ M	<0.1 @ M	<0.1 @ M	<0.1 @ M
Benzene	<0.009 mg/kg	TM116		<0.09 @ M	<0.09 @ M	<0.09 @ M	<0.09 @ M	<0.09 @ M	<0.09 @ M
Toluene	<0.007 mg/kg	TM116		<0.07 @ M	<0.07 @ M	<0.07 @ M	<0.07 @ M	<0.07 @ M	<0.07 @ M
Ethylbenzene	<0.004 mg/kg	TM116		<0.04 @ M	<0.04 @ M	<0.04 @ M	<0.04 @ M	<0.04 @ M	<0.04 @ M
p/m-Xylene	<0.01 mg/kg	TM116		<0.1 @ #	<0.1 @ #	<0.1 @ #	<0.1 @ #	<0.1 @ #	<0.1 @ #
o-Xylene	<0.01 mg/kg	TM116		<0.1 @ M	<0.1 @ M	<0.1 @ M	<0.1 @ M	<0.1 @ M	<0.1 @ M
Sum of Detected Xylenes	<0.02 mg/kg	TM116		<0.2 @	<0.2 @	<0.2 @	<0.2 @	<0.2 @	<0.2 @
Sum of BTEX	<0.04 mg/kg	TM116		<0.4 @	<0.4 @	<0.4 @	<0.4 @	<0.4 @	<0.4 @

Validated

CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

VOC MS (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-3+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	CPB13	CPB18	CPB18	CPB18	CPBP101	CPBP101
			Depth (m)	4.20 - 4.20	0.30 - 0.30	0.50 - 0.50	1.90 - 1.90	0.30 - 0.30	1.00 - 1.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	22/08/2019	21/08/2019	21/08/2019	21/08/2019	20/08/2019	20/08/2019
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	28/08/2019	28/08/2019	28/08/2019	28/08/2019	28/08/2019	28/08/2019
			SDG Ref	190828-36	190828-36	190828-36	190828-36	190828-36	190828-36
			Lab Sample No.(s)	20598466	20598207	20598340	20598478	20598715	20598729
			AGS Reference						
Dibromofluoromethane**	%	TM116		117 @	108 @	104 @	106 @	104 @	102 @
Toluene-d8**	%	TM116		97.8 @	93.4 @	92 @	97.5 @	90.9 @	92.8 @
4-Bromofluorobenzene**	%	TM116		94.6 @	84.7 @	77.7 @	93.3 @	85 @	90.1 @
Methyl Tertiary Butyl Ether	<0.01 mg/kg	TM116		<0.1 @ M	<0.1 @ M	<0.1 @ M	<0.1 @ M	<0.1 @ M	<0.1 @ M
Benzene	<0.009 mg/kg	TM116		<0.09 @ M	0.164 @ M	0.312 @ M	0.155 @ M	<0.09 @ M	0.342 @ M
Toluene	<0.007 mg/kg	TM116		<0.07 @ M	0.124 @ M	0.1 @ M	<0.07 @ M	<0.07 @ M	0.0772 @ M
Ethylbenzene	<0.004 mg/kg	TM116		<0.04 @ M	<0.04 @ M	0.0731 @ M	<0.04 @ M	<0.04 @ M	<0.04 @ M
p/m-Xylene	<0.01 mg/kg	TM116		<0.1 @ #	0.156 @ #	0.248 @ #	<0.1 @ #	<0.1 @ #	<0.1 @ #
o-Xylene	<0.01 mg/kg	TM116		<0.1 @ M	<0.1 @ M	<0.1 @ M	<0.1 @ M	<0.1 @ M	<0.1 @ M
Sum of Detected Xylenes	<0.02 mg/kg	TM116		<0.2 @	<0.2 @	0.248 @	<0.2 @	<0.2 @	<0.2 @
Sum of BTEX	<0.04 mg/kg	TM116		<0.4 @	0.816 @	0.968 @	<0.4 @	<0.4 @	<0.4 @

Validated

CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

VOC MS (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-3+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	CPBP101	CPBR3	CPBR3	CPBR3	CPBR3	CPBR4
			Depth (m)	1.50 - 1.50	3.40 - 3.40	4.80 - 4.80	7.40 - 7.40	9.10 - 9.10	2.50 - 2.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	20/08/2019	20/08/2019	20/08/2019	20/08/2019	20/08/2019	21/08/2019
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	28/08/2019	28/08/2019	28/08/2019	28/08/2019	28/08/2019	28/08/2019
			SDG Ref	190828-36	190828-36	190828-36	190828-36	190828-36	190828-36
			Lab Sample No.(s)	20598741	20598911	20598922	20598930	20598817	20598217
			AGS Reference						
Dibromofluoromethane**	%	TM116		100 @	106 @	106 @	105 @	103 @	111 @
Toluene-d8**	%	TM116		92.9 @	96.6 @	92.7 @	95.8 @	99.3 @	97.4 @
4-Bromofluorobenzene**	%	TM116		87.9 @	86.7 @	81.4 @	85.9 @	99 @	93 @
Methyl Tertiary Butyl Ether	<0.01 mg/kg	TM116		<0.1 @ M	<0.1 @ M	<0.1 @ M	<0.1 @ M	<0.1 @ M	<0.1 @ M
Benzene	<0.009 mg/kg	TM116		0.269 @ M	<0.09 @ M	<0.09 @ M	<0.09 @ M	<0.09 @ M	<0.09 @ M
Toluene	<0.007 mg/kg	TM116		<0.07 @ M	<0.07 @ M	<0.07 @ M	<0.07 @ M	<0.07 @ M	<0.07 @ M
Ethylbenzene	<0.004 mg/kg	TM116		<0.04 @ M	<0.04 @ M	<0.04 @ M	<0.04 @ M	<0.04 @ M	<0.04 @ M
p/m-Xylene	<0.01 mg/kg	TM116		<0.1 @ #	<0.1 @ #	<0.1 @ #	<0.1 @ #	<0.1 @ #	<0.1 @ #
o-Xylene	<0.01 mg/kg	TM116		<0.1 @ M	<0.1 @ M	<0.1 @ M	<0.1 @ M	<0.1 @ M	<0.1 @ M
Sum of Detected Xylenes	<0.02 mg/kg	TM116		<0.2 @	<0.2 @	<0.2 @	<0.2 @	<0.2 @	<0.2 @
Sum of BTEX	<0.04 mg/kg	TM116		<0.4 @	<0.4 @	<0.4 @	<0.4 @	<0.4 @	<0.4 @

Validated

CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

VOC MS (S)

Results Legend	
#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-3+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	CPBR4	CPBR4	CPBR4	CPBR9	CPBR9	CPBR9
			Depth (m)	3.50 - 3.50	7.50 - 7.50	9.40 - 9.40	3.10 - 3.10	4.20 - 4.20	8.80 - 8.80
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	21/08/2019	21/08/2019	21/08/2019	21/08/2019	21/08/2019	21/08/2019
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	28/08/2019	28/08/2019	28/08/2019	28/08/2019	28/08/2019	28/08/2019
			SDG Ref	190828-36	190828-36	190828-36	190828-36	190828-36	190828-36
			Lab Sample No.(s)	20598227	20598239	20598248	20598939	20598946	20598956
			AGS Reference						
Dibromofluoromethane**	%	TM116		119 @	108 @	111 @	113 @	111 @	110 @
Toluene-d8**	%	TM116		90.2 @	96 @	96.8 @	87.2 @	98.3 @	100 @
4-Bromofluorobenzene**	%	TM116		74.2 @	86.6 @	102 @	71.3 @	97.4 @	98.1 @
Methyl Tertiary Butyl Ether	<0.01 mg/kg	TM116		<0.1 @ M	<0.2 @ M	<0.1 @ M	<0.1 @ M	<0.1 @ M	<0.2 @ M
Benzene	<0.009 mg/kg	TM116		<0.09 @ M	<0.18 @ M	<0.09 @ M	<0.09 @ M	<0.09 @ M	<0.18 @ M
Toluene	<0.007 mg/kg	TM116		<0.07 @ M	<0.14 @ M	<0.07 @ M	<0.07 @ M	<0.07 @ M	<0.14 @ M
Ethylbenzene	<0.004 mg/kg	TM116		<0.04 @ M	<0.08 @ M	<0.04 @ M	<0.04 @ M	<0.04 @ M	<0.08 @ M
p/m-Xylene	<0.01 mg/kg	TM116		<0.1 @ #	<0.2 @ #	<0.1 @ #	<0.1 @ #	<0.1 @ #	<0.2 @ #
o-Xylene	<0.01 mg/kg	TM116		<0.1 @ M	<0.2 @ M	<0.1 @ M	<0.1 @ M	<0.1 @ M	<0.2 @ M
Sum of Detected Xylenes	<0.02 mg/kg	TM116		<0.2 @	<0.4 @	<0.2 @	<0.2 @	<0.2 @	<0.4 @
Sum of BTEX	<0.04 mg/kg	TM116		<0.4 @	<0.8 @	<0.4 @	<0.4 @	<0.4 @	<0.8 @

CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

VOC MS (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-3+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	WS01	WS01	WS04	WS04	WS04	WS13
			Depth (m)	0.30 - 0.30	0.50 - 0.50	0.30 - 0.30	1.00 - 1.00	3.40 - 3.80	0.30 - 0.30
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	22/08/2019	22/08/2019	22/08/2019	22/08/2019	22/08/2019	22/08/2019
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	28/08/2019	28/08/2019	28/08/2019	28/08/2019	28/08/2019	28/08/2019
			SDG Ref	190828-36	190828-36	190828-36	190828-36	190828-36	190828-36
			Lab Sample No.(s)	20598388	20598407	20598362	20598372	20598505	20598264
			AGS Reference						
Dibromofluoromethane**	%	TM116		91.2 @	96.8 @	97.6 @	117 @	126 @	97.9 @
Toluene-d8**	%	TM116		95 @	95.4 @	94.3 @	98.1 @	86.2 @	92.2 @
4-Bromofluorobenzene**	%	TM116		75.9 @	77.9 @	79.4 @	84.9 @	75 @	75.1 @
Methyl Tertiary Butyl Ether	<0.01 mg/kg	TM116		<0.1 @ M	<0.1 @ M	<0.1 @ M	<0.1 @ M	<0.1 @ M	<0.1 @ M
Benzene	<0.009 mg/kg	TM116		<0.09 @ M	<0.09 @ M	<0.09 @ M	<0.09 @ M	<0.09 @ M	<0.09 @ M
Toluene	<0.007 mg/kg	TM116		<0.07 @ M	<0.07 @ M	<0.07 @ M	<0.07 @ M	<0.07 @ M	<0.07 @ M
Ethylbenzene	<0.004 mg/kg	TM116		<0.04 @ M	<0.04 @ M	<0.04 @ M	<0.04 @ M	<0.04 @ M	<0.04 @ M
p/m-Xylene	<0.01 mg/kg	TM116		<0.1 @ #	<0.1 @ #	<0.1 @ #	<0.1 @ #	<0.1 @ #	<0.1 @ #
o-Xylene	<0.01 mg/kg	TM116		<0.1 @ M	<0.1 @ M	<0.1 @ M	<0.1 @ M	<0.1 @ M	<0.1 @ M
Sum of Detected Xylenes	<0.02 mg/kg	TM116		<0.2 @	<0.2 @	<0.2 @	<0.2 @	<0.2 @	<0.2 @
Sum of BTEX	<0.04 mg/kg	TM116		<0.4 @	<0.4 @	<0.4 @	<0.4 @	<0.4 @	<0.4 @

Validated

CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

VOC MS (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-3+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	WS13	WS13	WS13	WS19	WS19	WS19
			Depth (m)	0.50 - 0.50	1.00 - 1.00	1.80 - 1.80	0.30 - 0.30	1.00 - 1.00	1.80 - 1.80
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	22/08/2019	22/08/2019	22/08/2019	22/08/2019	22/08/2019	22/08/2019
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	28/08/2019	28/08/2019	28/08/2019	28/08/2019	28/08/2019	28/08/2019
			SDG Ref	190828-36	190828-36	190828-36	190828-36	190828-36	190828-36
			Lab Sample No.(s)	20598278	20598286	20598295	20598310	20598327	20598351
			AGS Reference						
Dibromofluoromethane**	%	TM116		95 @	112 @	106 @	121 @	120 @	111 @
Toluene-d8**	%	TM116		91.8 @	98.1 @	97.3 @	94.6 @	95.2 @	97.9 @
4-Bromofluorobenzene**	%	TM116		79.3 @	85.4 @	94 @	84.9 @	86 @	97.5 @
Methyl Tertiary Butyl Ether	<0.01 mg/kg	TM116		<0.1 @ M	<0.1 @ #	<0.2 @ M	<0.1 @ M	<0.1 @ M	<0.1 @ M
Benzene	<0.009 mg/kg	TM116		<0.09 @ M	0.168 @ #	<0.18 @ M	<0.09 @ M	<0.09 @ M	<0.09 @ M
Toluene	<0.007 mg/kg	TM116		<0.07 @ M	<0.07 @ #	<0.14 @ M	<0.07 @ M	<0.07 @ M	<0.07 @ M
Ethylbenzene	<0.004 mg/kg	TM116		<0.04 @ M	<0.04 @ #	<0.08 @ M	<0.04 @ M	<0.04 @ M	<0.04 @ M
p/m-Xylene	<0.01 mg/kg	TM116		<0.1 @ #	<0.1 @ #	<0.2 @ #	<0.1 @ #	<0.1 @ #	<0.1 @ #
o-Xylene	<0.01 mg/kg	TM116		<0.1 @ M	<0.1 @ #	<0.2 @ M	<0.1 @ M	<0.1 @ M	<0.1 @ M
Sum of Detected Xylenes	<0.02 mg/kg	TM116		<0.2 @	<0.2 @	<0.4 @	<0.2 @	<0.2 @	<0.2 @
Sum of BTEX	<0.04 mg/kg	TM116		<0.4 @	<0.4 @	<0.8 @	<0.4 @	<0.4 @	<0.4 @

Validated

CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

VOC MS (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-3+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	WS20	WSBP104	WSBP104	WSBP104	WSBP105	WSBP105
			Depth (m)	1.80 - 1.80	0.30 - 0.30	1.00 - 1.00	1.80 - 1.80	0.30 - 0.30	1.00 - 1.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	22/08/2019	20/08/2019	20/08/2019	20/08/2019	20/08/2019	20/08/2019
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	28/08/2019	28/08/2019	28/08/2019	28/08/2019	28/08/2019	28/08/2019
			SDG Ref	190828-36	190828-36	190828-36	190828-36	190828-36	190828-36
			Lab Sample No.(s)	20598518	20598585	20598597	20598613	20598682	20598696
			AGS Reference						
Dibromofluoromethane**	%	TM116		115 @	104 @	105 @	104 @	105 @	106 @
Toluene-d8**	%	TM116		100 @	97.4 @	96 @	97.3 @	94.5 @	95.1 @
4-Bromofluorobenzene**	%	TM116		97.9 @	98.1 @	95.5 @	94.5 @	92 @	90.9 @
Methyl Tertiary Butyl Ether	<0.01 mg/kg	TM116		<0.1 @ M	<0.1 @ M	<0.1 @ #	<0.1 @ M	<0.1 @ #	<0.1 @ #
Benzene	<0.009 mg/kg	TM116		<0.09 @ M	<0.09 @ M	<0.09 @ #	<0.09 @ M	1.08 @ #	0.647 @ #
Toluene	<0.007 mg/kg	TM116		<0.07 @ M	<0.07 @ M	<0.07 @ #	<0.07 @ M	1.07 @ #	0.239 @ #
Ethylbenzene	<0.004 mg/kg	TM116		<0.04 @ M	<0.04 @ M	<0.04 @ #	<0.04 @ M	0.413 @ #	0.153 @ #
p/m-Xylene	<0.01 mg/kg	TM116		<0.1 @ #	<0.1 @ #	<0.1 @ #	<0.1 @ #	1.62 @ #	0.406 @ #
o-Xylene	<0.01 mg/kg	TM116		<0.1 @ M	<0.1 @ M	<0.1 @ #	<0.1 @ M	0.461 @ #	0.11 @ #
Sum of Detected Xylenes	<0.02 mg/kg	TM116		<0.2 @	<0.2 @	<0.2 @	<0.2 @	2.08 @	0.516 @
Sum of BTEX	<0.04 mg/kg	TM116		<0.4 @	<0.4 @	<0.4 @	<0.4 @	5.43 @	1.39 @

Validated

CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

VOC MS (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-3+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	WSBP105	WSBP108	WSBP108	WSBP108	WSBP108	WSBP108
			Depth (m)	1.40 - 1.40	0.30 - 0.30	1.00 - 1.00	1.50 - 1.50	2.10 - 2.50	3.40 - 4.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	20/08/2019	20/08/2019	20/08/2019	20/08/2019	20/08/2019	20/08/2019
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	28/08/2019	28/08/2019	28/08/2019	28/08/2019	28/08/2019	28/08/2019
			SDG Ref	190828-36	190828-36	190828-36	190828-36	190828-36	190828-36
			Lab Sample No.(s)	20598707	20598541	20598552	20598565	20598757	20598778
			AGS Reference						
Dibromofluoromethane**	%	TM116		105 @	106 @	102 @	103 @	124 @	122 @
Toluene-d8**	%	TM116		94.3 @	98.1 @	96.9 @	97 @	99.8 @	92.4 @
4-Bromofluorobenzene**	%	TM116		90.9 @	97.2 @	96.4 @	93.6 @	97.9 @	82.8 @
Methyl Tertiary Butyl Ether	<0.01 mg/kg	TM116		<0.1 @ #	<0.1 @ M	<0.1 @ #	<0.1 @ M	<0.1 @ M	<0.1 @ M
Benzene	<0.009 mg/kg	TM116		1.33 @ #	0.108 @ M	1.15 @ #	0.231 @ M	<0.09 @ M	<0.09 @ M
Toluene	<0.007 mg/kg	TM116		0.195 @ #	<0.07 @ M	<0.07 @ #	<0.07 @ M	<0.07 @ M	<0.07 @ M
Ethylbenzene	<0.004 mg/kg	TM116		0.0841 @ #	<0.04 @ M	0.146 @ #	0.089 @ M	0.107 @ M	<0.04 @ M
p/m-Xylene	<0.01 mg/kg	TM116		0.208 @ #	<0.1 @ #	<0.1 @ #	<0.1 @ #	<0.1 @ #	<0.1 @ #
o-Xylene	<0.01 mg/kg	TM116		<0.1 @ #	<0.1 @ M	<0.1 @ #	<0.1 @ M	<0.1 @ M	<0.1 @ M
Sum of Detected Xylenes	<0.02 mg/kg	TM116		0.208 @	<0.2 @	<0.2 @	<0.2 @	<0.2 @	<0.2 @
Sum of BTEX	<0.04 mg/kg	TM116		0.965 @	<0.4 @	1.55 @	<0.4 @	<0.4 @	<0.4 @

Validated

CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

VOC MS (S)

Results Legend	
#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-3+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.					
			WSBP109	WSBP109	WSBP109			
			Depth (m)	0.30 - 0.30	1.00 - 1.00	1.60 - 1.60		
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)		
			Date Sampled	21/08/2019	21/08/2019	21/08/2019		
			Sample Time	00:00	00:00	00:00		
			Date Received	28/08/2019	28/08/2019	28/08/2019		
			SDG Ref	190828-36	190828-36	190828-36		
			Lab Sample No.(s)	20598625	20598767	20598871		
			AGS Reference					
Dibromofluoromethane**	%	TM116	107 @	108 @	108 @			
Toluene-d8**	%	TM116	95.3 @	96.3 @	98.3 @			
4-Bromofluorobenzene**	%	TM116	94.1 @	90 @	95.8 @			
Methyl Tertiary Butyl Ether	<0.01 mg/kg	TM116	<0.1 @ M	<0.1 @ M	<0.1 @ M			
Benzene	<0.009 mg/kg	TM116	0.199 @ M	3.21 @ M	0.254 @ M			
Toluene	<0.007 mg/kg	TM116	<0.07 @ M	0.348 @ #	<0.07 @ M			
Ethylbenzene	<0.004 mg/kg	TM116	0.0733 @ M	0.594 @ #	0.264 @ M			
p/m-Xylene	<0.01 mg/kg	TM116	0.177 @ #	1.82 @ #	1.14 @ #			
o-Xylene	<0.01 mg/kg	TM116	<0.1 @ M	0.248 @ #	<0.1 @ M			
Sum of Detected Xylenes	<0.02 mg/kg	TM116	<0.2 @	2.07 @	1.14 @			
Sum of BTEX	<0.04 mg/kg	TM116	<0.4 @	5.75 @	0.955 @			

CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

Asbestos Identification - Solid Samples

Results Legend

#	ISO17025 accredited.
M	*m*CERTS accredited.
*	Subcontracted test.
(F)	Trigger breach confirmed
1-5&♦§@	Sample deviation (see appendix)

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthophyllite	Fibrous Tremolite	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	BHCP105 0.30 - 0.30 SOLID 20/08/2019 00:00:00 28/08/2019 09:16:00 190828-36 20598637 TM048	30/08/2019	Marcin Magdziarek	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	BHCP105 0.50 - 0.50 SOLID 20/08/2019 00:00:00 28/08/2019 09:16:00 190828-36 20598655 TM048	30/08/2019	Lucy Caroe	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	BHCP105 1.00 - 1.00 SOLID 20/08/2019 00:00:00 28/08/2019 09:16:00 190828-36 20598666 TM048	30/08/2019	James Richards	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	CPB5 4.00 - 4.00 SOLID 22/08/2019 00:00:00 28/08/2019 09:16:00 190828-36 20598446 TM048	04/09/19	Andrzej Ferfecki	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	CPB5 7.80 - 7.80 SOLID 22/08/2019 00:00:00 28/08/2019 09:16:00 190828-36 20598438 TM048	03/09/2019	Lucy Caroe	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	CPB5 8.70 - 8.70 SOLID 22/08/2019 00:00:00 28/08/2019 09:16:00 190828-36 20598427 TM048	04/09/2019	Marcin Magdziarek	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	CPB7 2.70 - 2.70 SOLID 21/08/2019 00:00:00 28/08/2019 09:16:00 190828-36 20598824 TM048	03/09/2019	Marcin Magdziarek	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	CPB7 4.70 - 4.70 SOLID 21/08/2019 00:00:00 28/08/2019 09:16:00 190828-36 20598832 TM048	05/09/2019	Agnieszka Chelmowska	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected

Validated

CERTIFICATE OF ANALYSIS

SDG: 190828-36 **Client Reference:** **Report Number:** 522548
Location: Llanwern **Order Number:** LLA654 **Superseded Report:** 521395

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthophyllite	Fibrous Tremolite	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	CPB7 6.60 - 6.60 SOLID 21/08/2019 00:00:00 28/08/2019 09:16:00 190828-36 20598839 TM048	03/09/2019	Agnieszka Chelmowska	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	CPB9 3.50 - 3.50 SOLID 19/08/2019 00:00:00 28/08/2019 09:16:00 190828-36 20598847 TM048	04/09/19	Andrzej Ferfecki	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	CPB9 6.50 - 6.50 SOLID 19/08/2019 00:00:00 28/08/2019 09:16:00 190828-36 20598859 TM048	04/09/2019	Lucy Caroe	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	CPB9 7.60 - 7.60 SOLID 19/08/2019 00:00:00 28/08/2019 09:16:00 190828-36 20598882 TM048	04/09/2019	Marcin Magdziarek	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	CPB9 8.60 - 8.60 SOLID 19/08/2019 00:00:00 28/08/2019 09:16:00 190828-36 20598896 TM048	30/08/2019	James Richards	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	CPB11 3.50 - 3.50 SOLID 20/08/2019 00:00:00 28/08/2019 09:16:00 190828-36 20598788 TM048	03/09/2019	Marcin Magdziarek	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	CPB11 5.50 - 5.50 SOLID 20/08/2019 00:00:00 28/08/2019 09:16:00 190828-36 20598798 TM048	02/09/19	Andrzej Ferfecki	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	CPB11 9.50 - 9.50 SOLID 20/08/2019 00:00:00 28/08/2019 09:16:00 190828-36 20598808 TM048	03/09/2019	Lucy Caroe	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	CPB13 10.10 - 10.10 SOLID 22/08/2019 00:00:00 28/08/2019 09:16:00 190828-36 20598531 TM048	30/08/2019	Marcin Magdziarek	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected

Validated

CERTIFICATE OF ANALYSIS

SDG: 190828-36 **Client Reference:** **Report Number:** 522548
Location: Llanwern **Order Number:** LLA654 **Superseded Report:** 521395

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthophyllite	Fibrous Tremolite	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	CPB13 2.20 - 2.20 SOLID 22/08/2019 00:00:00 28/08/2019 09:16:00 190828-36 20598492 TM048	04/09/2019	Agnieszka Chelmowska	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	CPB13 4.20 - 4.20 SOLID 22/08/2019 00:00:00 28/08/2019 09:16:00 190828-36 20598466 TM048	03/09/2019	Lucy Caroe	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	CPB18 0.30 - 0.30 SOLID 21/08/2019 00:00:00 28/08/2019 09:16:00 190828-36 20598207 TM048	03/09/2019	Agnieszka Chelmowska	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	CPB18 0.50 - 0.50 SOLID 21/08/2019 00:00:00 28/08/2019 09:16:00 190828-36 20598340 TM048	30/08/2019	Lucy Caroe	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	CPB18 1.90 - 1.90 SOLID 21/08/2019 00:00:00 28/08/2019 09:16:00 190828-36 20598478 TM048	03/09/2019	Lucy Caroe	Loose fibres in soil	Detected (#)	Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	CPBP101 0.30 - 0.30 SOLID 20/08/2019 00:00:00 28/08/2019 09:16:00 190828-36 20598715 TM048	30/08/2019	James Richards	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	CPBP101 1.00 - 1.00 SOLID 20/08/2019 00:00:00 28/08/2019 09:16:00 190828-36 20598729 TM048	30/08/2019	Marcin Magdziarek	Loose fibres in soil	Not Detected (#)	Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	CPBP101 1.50 - 1.50 SOLID 20/08/2019 00:00:00 28/08/2019 09:16:00 190828-36 20598741 TM048	30/08/2019	Marcin Magdziarek	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	CPBR3 3.40 - 3.40 SOLID 20/08/2019 00:00:00 28/08/2019 09:16:00 190828-36 20598911 TM048	04/09/2019	Agnieszka Chelmowska	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected

CERTIFICATE OF ANALYSIS

SDG: 190828-36 **Client Reference:** **Report Number:** 522548
Location: Llanwern **Order Number:** LLA654 **Superseded Report:** 521395

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthophyllite	Fibrous Tremolite	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	CPBR3 4.80 - 4.80 SOLID 20/08/2019 00:00:00 28/08/2019 09:16:00 190828-36 20598922 TM048	04/09/2019	Agnieszka Chelmowska	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	CPBR3 7.40 - 7.40 SOLID 20/08/2019 00:00:00 28/08/2019 09:16:00 190828-36 20598930 TM048	04/09/19	Andrzej Ferfecki	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	CPBR3 9.10 - 9.10 SOLID 20/08/2019 00:00:00 28/08/2019 09:16:00 190828-36 20598817 TM048	04/09/19	Andrzej Ferfecki	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	CPBR4 2.50 - 2.50 SOLID 21/08/2019 00:00:00 28/08/2019 09:16:00 190828-36 20598217 TM048	02/09/19	Andrzej Ferfecki	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	CPBR4 3.50 - 3.50 SOLID 21/08/2019 00:00:00 28/08/2019 09:16:00 190828-36 20598227 TM048	04/09/2019	Marcin Magdziarek	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	CPBR4 7.50 - 7.50 SOLID 21/08/2019 00:00:00 28/08/2019 09:16:00 190828-36 20598239 TM048	03/09/2019	Agnieszka Chelmowska	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	CPBR4 9.40 - 9.40 SOLID 21/08/2019 00:00:00 28/08/2019 09:16:00 190828-36 20598248 TM048	03/09/2019	Marcin Magdziarek	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	CPBR9 3.10 - 3.10 SOLID 21/08/2019 00:00:00 28/08/2019 09:16:00 190828-36 20598939 TM048	03/09/2019	Agnieszka Chelmowska	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	CPBR9 4.20 - 4.20 SOLID 21/08/2019 00:00:00 28/08/2019 09:16:00 190828-36 20598946 TM048	03/09/2019	Agnieszka Chelmowska	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected

CERTIFICATE OF ANALYSIS

SDG: 190828-36 **Client Reference:** **Report Number:** 522548
Location: Llanwern **Order Number:** LLA654 **Superseded Report:** 521395

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthophyllite	Fibrous Tremolite	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	CPBR9 8.80 - 8.80 SOLID 21/08/2019 00:00:00 28/08/2019 09:16:00 190828-36 20598956 TM048	30/08/2019	Agnieszka Chelmowska	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	WS01 0.30 - 0.30 SOLID 22/08/2019 00:00:00 28/08/2019 09:16:00 190828-36 20598388 TM048	30/08/2019	James Richards	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	WS01 0.50 - 0.50 SOLID 22/08/2019 00:00:00 28/08/2019 09:16:00 190828-36 20598407 TM048	30/08/2019	James Richards	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	WS04 0.30 - 0.30 SOLID 22/08/2019 00:00:00 28/08/2019 09:16:00 190828-36 20598362 TM048	02/09/2019	Marcin Magdziarek	Loose fibres in soil	Not Detected (#)	Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	WS04 1.00 - 1.00 SOLID 22/08/2019 00:00:00 28/08/2019 09:16:00 190828-36 20598372 TM048	03/09/2019	Agnieszka Chelmowska	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	WS04 3.40 - 3.80 SOLID 22/08/2019 00:00:00 28/08/2019 09:16:00 190828-36 20598505 TM048	03/09/2019	Agnieszka Chelmowska	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	WS13 0.30 - 0.30 SOLID 22/08/2019 00:00:00 28/08/2019 09:16:00 190828-36 20598264 TM048	30/08/2019	Agnieszka Chelmowska	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	WS13 0.50 - 0.50 SOLID 22/08/2019 00:00:00 28/08/2019 09:16:00 190828-36 20598278 TM048	30/08/2019	James Richards	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	WS13 1.00 - 1.00 SOLID 22/08/2019 00:00:00 28/08/2019 09:16:00 190828-36 20598286 TM048	02/09/19	Andrzej Ferfecki	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected

Validated

CERTIFICATE OF ANALYSIS

SDG: 190828-36 **Client Reference:** **Report Number:** 522548
Location: Llanwern **Order Number:** LLA654 **Superseded Report:** 521395

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthophyllite	Fibrous Tremolite	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	WS13 1.80 - 1.80 SOLID 22/08/2019 00:00:00 28/08/2019 09:16:00 190828-36 20598295 TM048	04/09/2019	Barbara Urbanek-Walsh	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	WS19 0.30 - 0.30 SOLID 22/08/2019 00:00:00 28/08/2019 09:16:00 190828-36 20598310 TM048	30/08/2019	Agnieszka Chelmowska	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	WS19 1.00 - 1.00 SOLID 22/08/2019 00:00:00 28/08/2019 09:16:00 190828-36 20598327 TM048	30/08/2019	Lucy Caroe	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	WS19 1.80 - 1.80 SOLID 22/08/2019 00:00:00 28/08/2019 09:16:00 190828-36 20598351 TM048	04/09/2019	Marcin Magdziarek	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	WS20 1.80 - 1.80 SOLID 22/08/2019 00:00:00 28/08/2019 09:16:00 190828-36 20598518 TM048	03/09/2019	Lucy Caroe	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	WSBP104 0.30 - 0.30 SOLID 20/08/2019 00:00:00 28/08/2019 09:16:00 190828-36 20598585 TM048	02/09/19	Andrzej Ferfecki	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	WSBP104 1.00 - 1.00 SOLID 20/08/2019 00:00:00 28/08/2019 09:16:00 190828-36 20598597 TM048	02/09/2019	Lucy Caroe	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	WSBP104 1.80 - 1.80 SOLID 20/08/2019 00:00:00 28/08/2019 09:16:00 190828-36 20598613 TM048	04/09/2019	Marcin Magdziarek	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	WSBP105 0.30 - 0.30 SOLID 20/08/2019 00:00:00 28/08/2019 09:16:00 190828-36 20598682 TM048	04/09/19	Andrzej Ferfecki	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected

Validated

CERTIFICATE OF ANALYSIS

SDG: 190828-36 **Client Reference:** **Report Number:** 522548
Location: Llanwern **Order Number:** LLA654 **Superseded Report:** 521395

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthophyllite	Fibrous Tremolite	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	WSBP105 1.00 - 1.00 SOLID 20/08/2019 00:00:00 28/08/2019 09:16:00 190828-36 20598696 TM048	30/08/2019	Agnieszka Chelmowska	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	WSBP105 1.40 - 1.40 SOLID 20/08/2019 00:00:00 28/08/2019 09:16:00 190828-36 20598707 TM048	04/09/19	Andrzej Ferfecki	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	WSBP108 0.30 - 0.30 SOLID 20/08/2019 00:00:00 28/08/2019 09:16:00 190828-36 20598541 TM048	30/08/2019	Agnieszka Chelmowska	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	WSBP108 1.00 - 1.00 SOLID 20/08/2019 00:00:00 28/08/2019 09:16:00 190828-36 20598552 TM048	02/09/2019	Agnieszka Chelmowska	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	WSBP108 1.50 - 1.50 SOLID 20/08/2019 00:00:00 28/08/2019 09:16:00 190828-36 20598565 TM048	04/09/2019	Marcin Magdziarek	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	WSBP108 2.10 - 2.50 SOLID 20/08/2019 00:00:00 28/08/2019 09:16:00 190828-36 20598757 TM048	30/08/2019	Agnieszka Chelmowska	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	WSBP108 3.40 - 4.00 SOLID 20/08/2019 00:00:00 28/08/2019 09:16:00 190828-36 20598778 TM048	05/09/2019	Agnieszka Chelmowska	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	WSBP109 0.30 - 0.30 SOLID 21/08/2019 00:00:00 28/08/2019 09:16:00 190828-36 20598625 TM048	30/08/2019	Lucy Caroe	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	WSBP109 1.00 - 1.00 SOLID 21/08/2019 00:00:00 28/08/2019 09:16:00 190828-36 20598767 TM048	30/08/2019	Marcin Magdziarek	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected

Validated

CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthophyllite	Fibrous Tremolite	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	WSBP109 1.60 - 1.60 SOLID 21/08/2019 00:00:00 28/08/2019 09:16:00 190828-36 20598871 TM048	04/09/2019	Lucy Caroe	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Detected

Asbestos Quantification - Full

Results Legend

#	ISO17025 accredited.
M	*m*CERTS accredited.
*	Subcontracted test.
(F)	Trigger breach confirmed
1-5&+$@	Sample deviation (see appendix)

		Additional Asbestos Components	Analysts Comments	Asbestos Quantification - Gravimetric - %	Asbestos Quantification - PCOM	Asbestos Quantification - Total - %
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	CPB18 1.90 - 1.90 SOLID 21/08/2019 00:00:00 28/08/2019 09:16:00 190828-36 20598478 TM304	None (#)	-	<0.001 (#)	<0.001 (#)	<0.001 (#)
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	CPBP101 1.00 - 1.00 SOLID 20/08/2019 00:00:00 28/08/2019 09:16:00 190828-36 20598729 TM304	None (#)	Fibres typical of Amphibole Asbestos detected during PCOM analysis.	0.0016 (#)	<0.001 (#)	0.0022 (#)
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	WS04 0.30 - 0.30 SOLID 22/08/2019 00:00:00 28/08/2019 09:16:00 190828-36 20598362 TM304	None (#)	N/C	0.0093 (#)	<0.001 (#)	0.0094 (#)

Validated

CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.110	**Natural Moisture Content (%)**	22
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	82
Particle Size <4mm	>95%		

Case	
SDG	190828-36
Lab Sample Number(s)	20598207
Sampled Date	21-Aug-2019
Customer Sample Ref.	CPB18
Depth (m)	0.30 - 0.30

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Ammoniacal Nitrogen as N	0.0195	<0.01	0.195	<0.1	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00235	<0.0005	0.0235	<0.005	-	-	-
Free Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Phenol by HPLC (W)	<0.002	<0.002	<0.02	<0.02	-	-	-
Cresols by HPLC (W)	<0.006	<0.006	<0.06	<0.06	-	-	-
Xylenols by HPLC (W)	<0.008	<0.008	<0.08	<0.08	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Total Monohydric Phenols (W)	<0.016	<0.016	<0.16	<0.16	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	<0.0003	<0.0003	<0.003	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	0.00554	<0.001	0.0554	<0.01	-	-	-
Vanadium	0.0286	<0.001	0.286	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000245	<0.00001	0.000245	<0.0001	-	-	-
Acenaphthene by GCMS	0.000157	<0.000005	0.00157	<0.00005	-	-	-
Acenaphthylene by GCMS	0.00000845	<0.000005	0.0000845	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000815	<0.000005	0.000815	<0.00005	-	-	-
Anthracene by GCMS	0.0000188	<0.000005	0.000188	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000492	<0.000005	0.000492	<0.00005	-	-	-
Fluorene by GCMS	0.00003	<0.000005	0.0003	<0.00005	-	-	-
Chrysene by GCMS	0.0000318	<0.000005	0.000318	<0.00005	-	-	-
Pyrene by GCMS	0.0000728	<0.000005	0.000728	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.000023	<0.000005	0.00023	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.0000583	<0.000005	0.000583	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.0000201	<0.000005	0.000201	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.0000298	<0.000002	0.000298	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	0.00000734	<0.000005	0.0000734	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	0.0000246	<0.000005	0.000246	<0.00005	-	-	-

Leach Test Information

Date Prepared	05-Sep-2019
pH (pH Units)	9.72
Conductivity (µS/cm)	142.00
Temperature (°C)	19.40
Volume Leachant (Litres)	0.880

Mcerts Certification does not apply to leachates

23/09/2019 17:10:23

17:09:02 23/09/2019

CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.110	**Natural Moisture Content (%)**	22
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	82
Particle Size <4mm	>95%		

Case	
SDG	190828-36
Lab Sample Number(s)	20598207
Sampled Date	21-Aug-2019
Customer Sample Ref.	CPB18
Depth (m)	0.30 - 0.30

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
PAH Spec MS - Aqueous (W)							
PAH 16 EPA Total by GCMS	0.000637	<0.000082	0.00637	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	05-Sep-2019
pH (pH Units)	9.72
Conductivity (µS/cm)	142.00
Temperature (°C)	19.40
Volume Leachant (Litres)	0.880

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.153	**Natural Moisture Content (%)**	69.5
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	59
Particle Size <4mm	>95%		

Case	
SDG	190828-36
Lab Sample Number(s)	20598217
Sampled Date	21-Aug-2019
Customer Sample Ref.	CPBR4
Depth (m)	2.50 - 2.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Ammoniacal Nitrogen as N	10.2	<0.01	102	<0.1	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.0042	<0.0005	0.042	<0.005	-	-	-
Free Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Phenol by HPLC (W)	<0.002	<0.002	<0.02	<0.02	-	-	-
Cresols by HPLC (W)	<0.006	<0.006	<0.06	<0.06	-	-	-
Xylenols by HPLC (W)	<0.008	<0.008	<0.08	<0.08	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Total Monohydric Phenols (W)	<0.016	<0.016	<0.16	<0.16	-	-	-
Chromium	0.00363	<0.001	0.0363	<0.01	-	-	-
Copper	0.00885	<0.0003	0.0885	<0.003	-	-	-
Lead	0.00148	<0.0002	0.0148	<0.002	-	-	-
Manganese	0.0213	<0.003	0.213	<0.03	-	-	-
Nickel	0.00611	<0.0004	0.0611	<0.004	-	-	-
Selenium	0.00126	<0.001	0.0126	<0.01	-	-	-
Vanadium	0.00979	<0.001	0.0979	<0.01	-	-	-
Zinc	0.0334	<0.001	0.334	<0.01	-	-	-
Iron (Dis.Filt) mg/l	1.63	<0.019	16.3	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000463	<0.00001	0.000463	<0.0001	-	-	-
Acenaphthene by GCMS	0.000011	<0.000005	0.00011	<0.00005	-	-	-
Acenaphthylene by GCMS	0.0000276	<0.000005	0.000276	<0.00005	-	-	-
Fluoranthene by GCMS	0.00127	<0.000005	0.0127	<0.00005	-	-	-
Anthracene by GCMS	0.0000219	<0.000005	0.000219	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000983	<0.000005	0.000983	<0.00005	-	-	-
Fluorene by GCMS	0.0000306	<0.000005	0.000306	<0.00005	-	-	-
Chrysene by GCMS	0.000219	<0.000005	0.00219	<0.00005	-	-	-
Pyrene by GCMS	0.000744	<0.000005	0.00744	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.000302	<0.000005	0.00302	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.00034	<0.000005	0.0034	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.000133	<0.000005	0.00133	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.000202	<0.000002	0.00202	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	0.000026	<0.000005	0.00026	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	0.0000825	<0.000005	0.000825	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	0.000098	<0.000005	0.00098	<0.00005	-	-	-

Leach Test Information

Date Prepared	05-Sep-2019
pH (pH Units)	7.90
Conductivity (µS/cm)	303.00
Temperature (°C)	19.70
Volume Leachant (Litres)	0.837

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.153	**Natural Moisture Content (%)**	69.5
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	59
Particle Size <4mm	>95%		

Case	
SDG	190828-36
Lab Sample Number(s)	20598217
Sampled Date	21-Aug-2019
Customer Sample Ref.	CPBR4
Depth (m)	2.50 - 2.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
PAH Spec MS - Aqueous (W)							
PAH 16 EPA Total by GCMS	0.00365	<0.000082	0.0365	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	0.01	<0.01	0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	0.01	<0.01	0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	0.041	<0.01	0.41	<0.1	-	-	-
Total Aromatics >EC12-EC35	0.041	<0.01	0.41	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	0.062	<0.01	0.62	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	0.01	<0.01	0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	05-Sep-2019
pH (pH Units)	7.90
Conductivity (µS/cm)	303.00
Temperature (°C)	19.70
Volume Leachant (Litres)	0.837

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.311	**Natural Moisture Content (%)**	245
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	29
Particle Size <4mm	>95%		

Case	
SDG	190828-36
Lab Sample Number(s)	20598227
Sampled Date	21-Aug-2019
Customer Sample Ref.	CPBR4
Depth (m)	3.50 - 3.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Mercury Dissolved (CVAF)	0.0000281	<0.00001	0.000281	<0.0001	-	-	-
Ammoniacal Nitrogen as N	2.63	<0.01	26.3	<0.1	-	-	-
Total Cyanide (W)	0.43	<0.05	4.3	<0.5	-	-	-
Arsenic	0.00419	<0.0005	0.0419	<0.005	-	-	-
Free Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Phenol by HPLC (W)	<0.002	<0.002	<0.02	<0.02	-	-	-
Cresols by HPLC (W)	<0.006	<0.006	<0.06	<0.06	-	-	-
Xylenols by HPLC (W)	<0.008	<0.008	<0.08	<0.08	-	-	-
Cadmium	0.000147	<0.00008	0.00147	<0.0008	-	-	-
Total Monohydric Phenols (W)	<0.016	<0.016	<0.16	<0.16	-	-	-
Chromium	0.0178	<0.001	0.178	<0.01	-	-	-
Copper	0.0227	<0.0003	0.227	<0.003	-	-	-
Lead	0.00052	<0.0002	0.0052	<0.002	-	-	-
Manganese	0.0772	<0.003	0.772	<0.03	-	-	-
Nickel	0.00283	<0.0004	0.0283	<0.004	-	-	-
Selenium	0.0449	<0.001	0.449	<0.01	-	-	-
Vanadium	0.00949	<0.001	0.0949	<0.01	-	-	-
Zinc	0.0848	<0.001	0.848	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.301	<0.019	3.01	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	<0.00002	<0.00002	<0.0002	<0.0002	-	-	-
Acenaphthene by GCMS	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Acenaphthylene by GCMS	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Fluoranthene by GCMS	0.000275	<0.00001	0.00275	<0.0001	-	-	-
Anthracene by GCMS	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Phenanthrene by GCMS	0.0000419	<0.00001	0.000419	<0.0001	-	-	-
Fluorene by GCMS	0.0000131	<0.00001	0.000131	<0.0001	-	-	-
Chrysene by GCMS	0.00003	<0.00001	0.0003	<0.0001	-	-	-
Pyrene by GCMS	0.000194	<0.00001	0.00194	<0.0001	-	-	-
Benz(a)anthracene by GCMS	0.0000316	<0.00001	0.000316	<0.0001	-	-	-
Benzo(b)fluoranthene by GCMS	0.0000921	<0.00001	0.000921	<0.0001	-	-	-
Benzo(k)fluoranthene by GCMS	0.0000559	<0.00001	0.000559	<0.0001	-	-	-
Benzo(a)pyrene by GCMS	0.0000522	<0.000004	0.000522	<0.00004	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Benzo(ghi)perylene by GCMS	0.0000579	<0.00001	0.000579	<0.0001	-	-	-
Indeno(123cd)pyrene by GCMS	0.0000237	<0.00001	0.000237	<0.0001	-	-	-

Leach Test Information

Date Prepared	05-Sep-2019
pH (pH Units)	8.82
Conductivity (µS/cm)	2,150.00
Temperature (°C)	19.60
Volume Leachant (Litres)	0.680

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.311	**Natural Moisture Content (%)**	245
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	29
Particle Size <4mm	>95%		

Case	
SDG	190828-36
Lab Sample Number(s)	20598227
Sampled Date	21-Aug-2019
Customer Sample Ref.	CPBR4
Depth (m)	3.50 - 3.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
PAH Spec MS - Aqueous (W)							
PAH 16 EPA Total by GCMS	0.000867	<0.000164	0.00867	<0.00164	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.08	<0.08	<0.8	<0.8	-	-	-
Aliphatics >C16-C21	<0.08	<0.08	<0.8	<0.8	-	-	-
Aliphatics >C21-C35	<0.08	<0.08	<0.8	<0.8	-	-	-
Total Aliphatics >C12-C35	<0.08	<0.08	<0.8	<0.8	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.08	<0.08	<0.8	<0.8	-	-	-
Aromatics >EC16-EC21	<0.08	<0.08	<0.8	<0.8	-	-	-
Aromatics >EC21-EC35	<0.08	<0.08	<0.8	<0.8	-	-	-
Total Aromatics >EC12-EC35	<0.08	<0.08	<0.8	<0.8	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.08	<0.08	<0.8	<0.8	-	-	-

Leach Test Information

Date Prepared	05-Sep-2019
pH (pH Units)	8.82
Conductivity (µS/cm)	2,150.00
Temperature (°C)	19.60
Volume Leachant (Litres)	0.680

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.281	**Natural Moisture Content (%)**	213
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	32
Particle Size <4mm	>95%		

Case	
SDG	190828-36
Lab Sample Number(s)	20598239
Sampled Date	21-Aug-2019
Customer Sample Ref.	CPBR4
Depth (m)	7.50 - 7.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Ammoniacal Nitrogen as N	3.99	<0.01	39.9	<0.1	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.013	<0.0005	0.13	<0.005	-	-	-
Free Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Phenol by HPLC (W)	<0.002	<0.002	<0.02	<0.02	-	-	-
Cresols by HPLC (W)	0.01	<0.006	0.1	<0.06	-	-	-
Xylenols by HPLC (W)	<0.008	<0.008	<0.08	<0.08	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Total Monohydric Phenols (W)	<0.016	<0.016	<0.16	<0.16	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	<0.0003	<0.0003	<0.003	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	0.123	<0.003	1.23	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	<0.001	<0.001	<0.01	<0.01	-	-	-
Vanadium	<0.001	<0.001	<0.01	<0.01	-	-	-
Zinc	0.00728	<0.001	0.0728	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Acenaphthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000122	<0.000005	0.000122	<0.00005	-	-	-
Anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000122	<0.000005	0.000122	<0.00005	-	-	-
Fluorene by GCMS	0.00000919	<0.000005	0.0000919	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.00000803	<0.000005	0.0000803	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-

Leach Test Information

Date Prepared	05-Sep-2019
pH (pH Units)	8.00
Conductivity (µS/cm)	688.00
Temperature (°C)	19.90
Volume Leachant (Litres)	0.708

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.281	**Natural Moisture Content (%)**	213
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	32
Particle Size <4mm	>95%		

Case	
SDG	190828-36
Lab Sample Number(s)	20598239
Sampled Date	21-Aug-2019
Customer Sample Ref.	CPBR4
Depth (m)	7.50 - 7.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
PAH Spec MS - Aqueous (W)							
PAH 16 EPA Total by GCMS	<0.000082	<0.000082	<0.00082	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	0.019	<0.01	0.19	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	05-Sep-2019
pH (pH Units)	8.00
Conductivity (µS/cm)	688.00
Temperature (°C)	19.90
Volume Leachant (Litres)	0.708

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.101	**Natural Moisture Content (%)**	12.4
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	89
Particle Size <4mm	>95%		

Case	
SDG	190828-36
Lab Sample Number(s)	20598264
Sampled Date	22-Aug-2019
Customer Sample Ref.	WS13
Depth (m)	0.30 - 0.30

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Ammoniacal Nitrogen as N	0.039	<0.01	0.39	<0.1	-	-	-
Total Cyanide (W)	0.06	<0.05	0.6	<0.5	-	-	-
Arsenic	0.00167	<0.0005	0.0167	<0.005	-	-	-
Free Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Phenol by HPLC (W)	<0.002	<0.002	<0.02	<0.02	-	-	-
Cresols by HPLC (W)	<0.006	<0.006	<0.06	<0.06	-	-	-
Xylenols by HPLC (W)	<0.008	<0.008	<0.08	<0.08	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Total Monohydric Phenols (W)	<0.016	<0.016	<0.16	<0.16	-	-	-
Chromium	0.00108	<0.001	0.0108	<0.01	-	-	-
Copper	<0.0003	<0.0003	<0.003	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	0.00117	<0.001	0.0117	<0.01	-	-	-
Vanadium	0.0352	<0.001	0.352	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000657	<0.00001	0.000657	<0.0001	-	-	-
Acenaphthene by GCMS	0.0000107	<0.000005	0.000107	<0.00005	-	-	-
Acenaphthylene by GCMS	0.0000401	<0.000005	0.000401	<0.00005	-	-	-
Fluoranthene by GCMS	0.000233	<0.000005	0.00233	<0.00005	-	-	-
Anthracene by GCMS	0.000035	<0.000005	0.00035	<0.00005	-	-	-
Phenanthrene by GCMS	0.000108	<0.000005	0.00108	<0.00005	-	-	-
Fluorene by GCMS	0.0000159	<0.000005	0.000159	<0.00005	-	-	-
Chrysene by GCMS	0.000152	<0.000005	0.00152	<0.00005	-	-	-
Pyrene by GCMS	0.00029	<0.000005	0.0029	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.000103	<0.000005	0.00103	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.000174	<0.000005	0.00174	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.000105	<0.000005	0.00105	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.0000902	<0.000002	0.000902	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	0.0000163	<0.000005	0.000163	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	0.000151	<0.000005	0.00151	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	0.000069	<0.000005	0.00069	<0.00005	-	-	-

Leach Test Information

Date Prepared	05-Sep-2019
pH (pH Units)	10.41
Conductivity (µS/cm)	239.00
Temperature (°C)	19.60
Volume Leachant (Litres)	0.889

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.101	**Natural Moisture Content (%)**	12.4
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	89
Particle Size <4mm	>95%		

Case	
SDG	190828-36
Lab Sample Number(s)	20598264
Sampled Date	22-Aug-2019
Customer Sample Ref.	WS13
Depth (m)	0.30 - 0.30

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
PAH Spec MS - Aqueous (W)							
PAH 16 EPA Total by GCMS	0.00166	<0.000082	0.0166	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	05-Sep-2019
pH (pH Units)	10.41
Conductivity (µS/cm)	239.00
Temperature (°C)	19.60
Volume Leachant (Litres)	0.889

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.102	**Natural Moisture Content (%)**	13.6
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	88
Particle Size <4mm	>95%		

Case	
SDG	190828-36
Lab Sample Number(s)	20598278
Sampled Date	22-Aug-2019
Customer Sample Ref.	WS13
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Ammoniacal Nitrogen as N	0.0453	<0.01	0.453	<0.1	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00247	<0.0005	0.0247	<0.005	-	-	-
Free Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Phenol by HPLC (W)	<0.002	<0.002	<0.02	<0.02	-	-	-
Cresols by HPLC (W)	<0.006	<0.006	<0.06	<0.06	-	-	-
Xylenols by HPLC (W)	<0.008	<0.008	<0.08	<0.08	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Total Monohydric Phenols (W)	<0.016	<0.016	<0.16	<0.16	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	<0.0003	<0.0003	<0.003	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	0.00156	<0.001	0.0156	<0.01	-	-	-
Vanadium	0.0386	<0.001	0.386	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000369	<0.00001	0.000369	<0.0001	-	-	-
Acenaphthene by GCMS	0.00000706	<0.000005	0.0000706	<0.00005	-	-	-
Acenaphthylene by GCMS	0.0000272	<0.000005	0.000272	<0.00005	-	-	-
Fluoranthene by GCMS	0.000136	<0.000005	0.00136	<0.00005	-	-	-
Anthracene by GCMS	0.0000189	<0.000005	0.000189	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000646	<0.000005	0.000646	<0.00005	-	-	-
Fluorene by GCMS	0.00000925	<0.000005	0.0000925	<0.00005	-	-	-
Chrysene by GCMS	0.000101	<0.000005	0.00101	<0.00005	-	-	-
Pyrene by GCMS	0.000166	<0.000005	0.00166	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.0000757	<0.000005	0.000757	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.000138	<0.000005	0.00138	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.0000787	<0.000005	0.000787	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.000067	<0.000002	0.00067	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	0.0000139	<0.000005	0.000139	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	0.000146	<0.000005	0.00146	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	0.0000549	<0.000005	0.000549	<0.00005	-	-	-

Leach Test Information

Date Prepared	05-Sep-2019
pH (pH Units)	9.39
Conductivity (µS/cm)	206.00
Temperature (°C)	19.40
Volume Leachant (Litres)	0.888

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.102	**Natural Moisture Content (%)**	13.6
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	88
Particle Size <4mm	>95%		

Case	
SDG	190828-36
Lab Sample Number(s)	20598278
Sampled Date	22-Aug-2019
Customer Sample Ref.	WS13
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
PAH Spec MS - Aqueous (W)							
PAH 16 EPA Total by GCMS	0.00114	<0.000082	0.0114	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	05-Sep-2019
pH (pH Units)	9.39
Conductivity (µS/cm)	206.00
Temperature (°C)	19.40
Volume Leachant (Litres)	0.888

Mcerts Certification does not apply to leachates

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Validated

CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.096	**Natural Moisture Content (%)**	6.72
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	93.7
Particle Size <4mm	>95%		

Case	
SDG	190828-36
Lab Sample Number(s)	20598310
Sampled Date	22-Aug-2019
Customer Sample Ref.	WS19
Depth (m)	0.30 - 0.30

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Ammoniacal Nitrogen as N	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00352	<0.0005	0.0352	<0.005	-	-	-
Free Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Phenol by HPLC (W)	<0.002	<0.002	<0.02	<0.02	-	-	-
Cresols by HPLC (W)	<0.006	<0.006	<0.06	<0.06	-	-	-
Xylenols by HPLC (W)	<0.008	<0.008	<0.08	<0.08	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Total Monohydric Phenols (W)	<0.016	<0.016	<0.16	<0.16	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	<0.0003	<0.0003	<0.003	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	0.00445	<0.003	0.0445	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	0.00228	<0.001	0.0228	<0.01	-	-	-
Vanadium	0.0101	<0.001	0.101	<0.01	-	-	-
Zinc	0.0115	<0.001	0.115	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Acenaphthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Acenaphthylene by GCMS	0.0000194	<0.000005	0.000194	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000218	<0.000005	0.000218	<0.00005	-	-	-
Anthracene by GCMS	0.0000308	<0.000005	0.000308	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000947	<0.000005	0.000947	<0.00005	-	-	-
Fluorene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.0000475	<0.000005	0.000475	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.0000109	<0.000005	0.000109	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.0000059	<0.000005	0.000059	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.00000506	<0.000002	0.0000506	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	0.0000193	<0.000005	0.000193	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-

Leach Test Information

Date Prepared	05-Sep-2019
pH (pH Units)	8.21
Conductivity (µS/cm)	256.00
Temperature (°C)	19.40
Volume Leachant (Litres)	0.894

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.096	**Natural Moisture Content (%)**	6.72
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	93.7
Particle Size <4mm	>95%		

Case	
SDG	190828-36
Lab Sample Number(s)	20598310
Sampled Date	22-Aug-2019
Customer Sample Ref.	WS19
Depth (m)	0.30 - 0.30

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
PAH Spec MS - Aqueous (W)							
PAH 16 EPA Total by GCMS	0.000255	<0.000082	0.00255	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	0.019	<0.01	0.19	<0.1	-	-	-
Aromatics >EC21-EC35	0.015	<0.01	0.15	<0.1	-	-	-
Total Aromatics >EC12-EC35	0.034	<0.01	0.34	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	0.037	<0.01	0.37	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	05-Sep-2019
pH (pH Units)	8.21
Conductivity (µS/cm)	256.00
Temperature (°C)	19.40
Volume Leachant (Litres)	0.894

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.099	**Natural Moisture Content (%)**	10.3
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	90.7
Particle Size <4mm	>95%		

Case	
SDG	190828-36
Lab Sample Number(s)	20598327
Sampled Date	22-Aug-2019
Customer Sample Ref.	WS19
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Ammoniacal Nitrogen as N	0.0122	<0.01	0.122	<0.1	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00474	<0.0005	0.0474	<0.005	-	-	-
Free Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Phenol by HPLC (W)	<0.002	<0.002	<0.02	<0.02	-	-	-
Cresols by HPLC (W)	<0.006	<0.006	<0.06	<0.06	-	-	-
Xylenols by HPLC (W)	<0.008	<0.008	<0.08	<0.08	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Total Monohydric Phenols (W)	<0.016	<0.016	<0.16	<0.16	-	-	-
Chromium	0.00152	<0.001	0.0152	<0.01	-	-	-
Copper	<0.0003	<0.0003	<0.003	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	0.00459	<0.001	0.0459	<0.01	-	-	-
Vanadium	0.024	<0.001	0.24	<0.01	-	-	-
Zinc	0.00158	<0.001	0.0158	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Acenaphthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Acenaphthylene by GCMS	0.0000212	<0.000005	0.000212	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000346	<0.000005	0.000346	<0.00005	-	-	-
Anthracene by GCMS	0.000029	<0.000005	0.00029	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000681	<0.000005	0.000681	<0.00005	-	-	-
Fluorene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene by GCMS	0.0000157	<0.000005	0.000157	<0.00005	-	-	-
Pyrene by GCMS	0.0000348	<0.000005	0.000348	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.000012	<0.000005	0.00012	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.0000263	<0.000005	0.000263	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.0000177	<0.000005	0.000177	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.0000148	<0.000002	0.000148	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	0.0000527	<0.000005	0.000527	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	0.0000182	<0.000005	0.000182	<0.00005	-	-	-

Leach Test Information

Date Prepared	05-Sep-2019
pH (pH Units)	8.10
Conductivity (µS/cm)	208.00
Temperature (°C)	19.60
Volume Leachant (Litres)	0.891

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.099	**Natural Moisture Content (%)**	10.3
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	90.7
Particle Size <4mm	>95%		

Case	
SDG	190828-36
Lab Sample Number(s)	20598327
Sampled Date	22-Aug-2019
Customer Sample Ref.	WS19
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
PAH Spec MS - Aqueous (W)							
PAH 16 EPA Total by GCMS	0.000345	<0.000082	0.00345	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	05-Sep-2019
pH (pH Units)	8.10
Conductivity (µS/cm)	208.00
Temperature (°C)	19.60
Volume Leachant (Litres)	0.891

Mcerts Certification does not apply to leachates

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Validated

CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.113	**Natural Moisture Content (%)**	25
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	80
Particle Size <4mm	>95%		

Case	
SDG	190828-36
Lab Sample Number(s)	20598340
Sampled Date	21-Aug-2019
Customer Sample Ref.	CPB18
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Mercury Dissolved (CVAF)	0.0000352	<0.00001	0.000352	<0.0001	-	-	-
Ammoniacal Nitrogen as N	0.0238	<0.01	0.238	<0.1	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00321	<0.0005	0.0321	<0.005	-	-	-
Free Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Phenol by HPLC (W)	<0.002	<0.002	<0.02	<0.02	-	-	-
Cresols by HPLC (W)	<0.006	<0.006	<0.06	<0.06	-	-	-
Xylenols by HPLC (W)	<0.008	<0.008	<0.08	<0.08	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Total Monohydric Phenols (W)	<0.016	<0.016	<0.16	<0.16	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	<0.0003	<0.0003	<0.003	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	0.00725	<0.001	0.0725	<0.01	-	-	-
Vanadium	0.068	<0.001	0.68	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000176	<0.00001	0.000176	<0.0001	-	-	-
Acenaphthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000506	<0.000005	0.000506	<0.00005	-	-	-
Anthracene by GCMS	0.0000086	<0.000005	0.000086	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000269	<0.000005	0.000269	<0.00005	-	-	-
Fluorene by GCMS	0.00000798	<0.000005	0.0000798	<0.00005	-	-	-
Chrysene by GCMS	0.0000172	<0.000005	0.000172	<0.00005	-	-	-
Pyrene by GCMS	0.0000417	<0.000005	0.000417	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.000011	<0.000005	0.00011	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.0000266	<0.000005	0.000266	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.00000951	<0.000005	0.0000951	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.0000121	<0.000002	0.000121	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	0.0000127	<0.000005	0.000127	<0.00005	-	-	-

Leach Test Information

Date Prepared	05-Sep-2019
pH (pH Units)	9.76
Conductivity (µS/cm)	207.00
Temperature (°C)	19.40
Volume Leachant (Litres)	0.878

Mcerts Certification does not apply to leachates

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17:09:02 23/09/2019

CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.113	**Natural Moisture Content (%)**	25
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	80
Particle Size <4mm	>95%		

Case	
SDG	190828-36
Lab Sample Number(s)	20598340
Sampled Date	21-Aug-2019
Customer Sample Ref.	CPB18
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
PAH Spec MS - Aqueous (W)							
PAH 16 EPA Total by GCMS	0.000242	<0.000082	0.00242	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	05-Sep-2019
pH (pH Units)	9.76
Conductivity (µS/cm)	207.00
Temperature (°C)	19.40
Volume Leachant (Litres)	0.878

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.099	**Natural Moisture Content (%)**	10.1
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	90.8
Particle Size <4mm	>95%		

Case	
SDG	190828-36
Lab Sample Number(s)	20598362
Sampled Date	22-Aug-2019
Customer Sample Ref.	WS04
Depth (m)	0.30 - 0.30

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Mercury Dissolved (CVAF)	0.0000121	<0.00001	0.000121	<0.0001	-	-	-
Ammoniacal Nitrogen as N	0.019	<0.01	0.19	<0.1	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00268	<0.0005	0.0268	<0.005	-	-	-
Free Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Phenol by HPLC (W)	<0.002	<0.002	<0.02	<0.02	-	-	-
Cresols by HPLC (W)	<0.006	<0.006	<0.06	<0.06	-	-	-
Xylenols by HPLC (W)	<0.008	<0.008	<0.08	<0.08	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Total Monohydric Phenols (W)	<0.016	<0.016	<0.16	<0.16	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.00578	<0.0003	0.0578	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.000958	<0.0004	0.00958	<0.004	-	-	-
Selenium	0.00223	<0.001	0.0223	<0.01	-	-	-
Vanadium	0.156	<0.001	1.56	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000155	<0.00001	0.000155	<0.0001	-	-	-
Acenaphthene by GCMS	0.0000222	<0.000005	0.000222	<0.00005	-	-	-
Acenaphthylene by GCMS	0.0000481	<0.000005	0.000481	<0.00005	-	-	-
Fluoranthene by GCMS	0.000233	<0.000005	0.00233	<0.00005	-	-	-
Anthracene by GCMS	0.000031	<0.000005	0.00031	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000896	<0.000005	0.000896	<0.00005	-	-	-
Fluorene by GCMS	0.0000344	<0.000005	0.000344	<0.00005	-	-	-
Chrysene by GCMS	0.0000463	<0.000005	0.000463	<0.00005	-	-	-
Pyrene by GCMS	0.000203	<0.000005	0.00203	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.0000464	<0.000005	0.000464	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.0000321	<0.000005	0.000321	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.0000215	<0.000005	0.000215	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.0000193	<0.000002	0.000193	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	0.0000258	<0.000005	0.000258	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	0.0000108	<0.000005	0.000108	<0.00005	-	-	-

Leach Test Information

Date Prepared	05-Sep-2019
pH (pH Units)	10.21
Conductivity (µS/cm)	273.00
Temperature (°C)	19.30
Volume Leachant (Litres)	0.891

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.099	**Natural Moisture Content (%)**	10.1
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	90.8
Particle Size <4mm	>95%		

Case	
SDG	190828-36
Lab Sample Number(s)	20598362
Sampled Date	22-Aug-2019
Customer Sample Ref.	WS04
Depth (m)	0.30 - 0.30

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
PAH Spec MS - Aqueous (W)							
PAH 16 EPA Total by GCMS	0.000879	<0.000082	0.00879	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	05-Sep-2019
pH (pH Units)	10.21
Conductivity (µS/cm)	273.00
Temperature (°C)	19.30
Volume Leachant (Litres)	0.891

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.102	**Natural Moisture Content (%)**	13.6
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	88
Particle Size <4mm	>95%		

Case	
SDG	190828-36
Lab Sample Number(s)	20598372
Sampled Date	22-Aug-2019
Customer Sample Ref.	WS04
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Ammoniacal Nitrogen as N	12.3	<0.01	123	<0.1	-	-	-
Total Cyanide (W)	1.11	<0.05	11.1	<0.5	-	-	-
Arsenic	0.0074	<0.0005	0.074	<0.005	-	-	-
Free Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Phenol by HPLC (W)	0.04	<0.002	0.4	<0.02	-	-	-
Cresols by HPLC (W)	<0.006	<0.006	<0.06	<0.06	-	-	-
Xylenols by HPLC (W)	<0.008	<0.008	<0.08	<0.08	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Total Monohydric Phenols (W)	0.04	<0.016	0.4	<0.16	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	<0.0003	<0.0003	<0.003	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	0.00365	<0.003	0.0365	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	0.00366	<0.001	0.0366	<0.01	-	-	-
Vanadium	0.0536	<0.001	0.536	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.456	<0.019	4.56	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000858	<0.00001	0.000858	<0.0001	-	-	-
Acenaphthene by GCMS	0.0155	<0.000005	0.155	<0.00005	-	-	-
Acenaphthylene by GCMS	0.0521	<0.000005	0.521	<0.00005	-	-	-
Fluoranthene by GCMS	0.0691	<0.000005	0.691	<0.00005	-	-	-
Anthracene by GCMS	0.00592	<0.000005	0.0592	<0.00005	-	-	-
Phenanthrene by GCMS	0.000601	<0.000005	0.00601	<0.00005	-	-	-
Fluorene by GCMS	0.0516	<0.000005	0.516	<0.00005	-	-	-
Chrysene by GCMS	0.000574	<0.000005	0.00574	<0.00005	-	-	-
Pyrene by GCMS	0.0328	<0.000005	0.328	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.000751	<0.000005	0.00751	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.000389	<0.000005	0.00389	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.000169	<0.000005	0.00169	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.000224	<0.000002	0.00224	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	0.000164	<0.000005	0.00164	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	0.000202	<0.000005	0.00202	<0.00005	-	-	-

Leach Test Information

Date Prepared	05-Sep-2019
pH (pH Units)	9.40
Conductivity (µS/cm)	218.00
Temperature (°C)	19.50
Volume Leachant (Litres)	0.888

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.102	**Natural Moisture Content (%)**	13.6
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	88
Particle Size <4mm	>95%		

Case	
SDG	190828-36
Lab Sample Number(s)	20598372
Sampled Date	22-Aug-2019
Customer Sample Ref.	WS04
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
PAH Spec MS - Aqueous (W)							
PAH 16 EPA Total by GCMS	0.23	<0.000082	2.3	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	0.208	<0.05	2.08	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	0.011	<0.01	0.11	<0.1	-	-	-
Aliphatics >C8-C10	0.018	<0.01	0.18	<0.1	-	-	-
Aliphatics >C10-C12	0.095	<0.01	0.95	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	0.013	<0.01	0.13	<0.1	-	-	-
Aromatics >EC10-EC12	0.063	<0.01	0.63	<0.1	-	-	-
Aromatics >EC12-EC16	0.22	<0.01	2.2	<0.1	-	-	-
Aromatics >EC16-EC21	0.191	<0.01	1.91	<0.1	-	-	-
Aromatics >EC21-EC35	0.046	<0.01	0.46	<0.1	-	-	-
Total Aromatics >EC12-EC35	0.457	<0.01	4.57	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	0.665	<0.01	6.65	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	05-Sep-2019
pH (pH Units)	9.40
Conductivity (µS/cm)	218.00
Temperature (°C)	19.50
Volume Leachant (Litres)	0.888

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.100	**Natural Moisture Content (%)**	11
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	90.1
Particle Size <4mm	>95%		

Case	
SDG	190828-36
Lab Sample Number(s)	20598388
Sampled Date	22-Aug-2019
Customer Sample Ref.	WS01
Depth (m)	0.30 - 0.30

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Ammoniacal Nitrogen as N	0.0143	<0.01	0.143	<0.1	-	-	-
Total Cyanide (W)	0.14	<0.05	1.4	<0.5	-	-	-
Arsenic	0.00326	<0.0005	0.0326	<0.005	-	-	-
Free Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Phenol by HPLC (W)	<0.002	<0.002	<0.02	<0.02	-	-	-
Cresols by HPLC (W)	<0.006	<0.006	<0.06	<0.06	-	-	-
Xylenols by HPLC (W)	<0.008	<0.008	<0.08	<0.08	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Total Monohydric Phenols (W)	<0.016	<0.016	<0.16	<0.16	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	<0.0003	<0.0003	<0.003	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	0.00221	<0.001	0.0221	<0.01	-	-	-
Vanadium	0.107	<0.001	1.07	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.708	<0.019	7.08	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.000869	<0.00005	0.00869	<0.0005	-	-	-
Acenaphthene by GCMS	0.000697	<0.000025	0.00697	<0.00025	-	-	-
Acenaphthylene by GCMS	0.00466	<0.000025	0.0466	<0.00025	-	-	-
Fluoranthene by GCMS	0.0134	<0.000025	0.134	<0.00025	-	-	-
Anthracene by GCMS	0.00238	<0.000025	0.0238	<0.00025	-	-	-
Phenanthrene by GCMS	0.00576	<0.000025	0.0576	<0.00025	-	-	-
Fluorene by GCMS	0.00676	<0.000025	0.0676	<0.00025	-	-	-
Chrysene by GCMS	0.00274	<0.000025	0.0274	<0.00025	-	-	-
Pyrene by GCMS	0.00905	<0.000025	0.0905	<0.00025	-	-	-
Benz(a)anthracene by GCMS	0.00329	<0.000025	0.0329	<0.00025	-	-	-
Benzo(b)fluoranthene by GCMS	0.00495	<0.000025	0.0495	<0.00025	-	-	-
Benzo(k)fluoranthene by GCMS	0.002	<0.000025	0.02	<0.00025	-	-	-
Benzo(a)pyrene by GCMS	0.00304	<0.00001	0.0304	<0.0001	-	-	-
Dibenzo(ah)anthracene by GCMS	0.000475	<0.000025	0.00475	<0.00025	-	-	-
Benzo(ghi)perylene by GCMS	0.00251	<0.000025	0.0251	<0.00025	-	-	-
Indeno(123cd)pyrene by GCMS	0.00238	<0.000025	0.0238	<0.00025	-	-	-

Leach Test Information

Date Prepared	05-Sep-2019
pH (pH Units)	9.04
Conductivity (µS/cm)	162.00
Temperature (°C)	21.80
Volume Leachant (Litres)	0.890

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.100	**Natural Moisture Content (%)**	11
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	90.1
Particle Size <4mm	>95%		

Case	
SDG	190828-36
Lab Sample Number(s)	20598388
Sampled Date	22-Aug-2019
Customer Sample Ref.	WS01
Depth (m)	0.30 - 0.30

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
PAH Spec MS - Aqueous (W)							
PAH 16 EPA Total by GCMS	0.065	<0.00041	0.65	<0.0041	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	0.025	<0.01	0.25	<0.1	-	-	-
Total Aliphatics >C12-C35	0.025	<0.01	0.25	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	0.016	<0.01	0.16	<0.1	-	-	-
Aromatics >EC21-EC35	0.026	<0.01	0.26	<0.1	-	-	-
Total Aromatics >EC12-EC35	0.042	<0.01	0.42	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	0.067	<0.01	0.67	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	0.025	<0.01	0.25	<0.1	-	-	-

Leach Test Information

Date Prepared	05-Sep-2019
pH (pH Units)	9.04
Conductivity (µS/cm)	162.00
Temperature (°C)	21.80
Volume Leachant (Litres)	0.890

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.103	**Natural Moisture Content (%)**	14.9
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	87
Particle Size <4mm	>95%		

Case	
SDG	190828-36
Lab Sample Number(s)	20598407
Sampled Date	22-Aug-2019
Customer Sample Ref.	WS01
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Mercury Dissolved (CVAF)	0.0000214	<0.00001	0.000214	<0.0001	-	-	-
Ammoniacal Nitrogen as N	0.0468	<0.01	0.468	<0.1	-	-	-
Total Cyanide (W)	0.24	<0.05	2.4	<0.5	-	-	-
Arsenic	0.00146	<0.0005	0.0146	<0.005	-	-	-
Free Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Phenol by HPLC (W)	<0.002	<0.002	<0.02	<0.02	-	-	-
Cresols by HPLC (W)	<0.006	<0.006	<0.06	<0.06	-	-	-
Xylenols by HPLC (W)	<0.008	<0.008	<0.08	<0.08	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Total Monohydric Phenols (W)	<0.016	<0.016	<0.16	<0.16	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.00141	<0.0003	0.0141	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	0.00207	<0.001	0.0207	<0.01	-	-	-
Vanadium	0.109	<0.001	1.09	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.976	<0.019	9.76	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.000112	<0.00002	0.00112	<0.0002	-	-	-
Acenaphthene by GCMS	0.000158	<0.00001	0.00158	<0.0001	-	-	-
Acenaphthylene by GCMS	0.000805	<0.00001	0.00805	<0.0001	-	-	-
Fluoranthene by GCMS	0.00179	<0.00001	0.0179	<0.0001	-	-	-
Anthracene by GCMS	0.000266	<0.00001	0.00266	<0.0001	-	-	-
Phenanthrene by GCMS	0.000678	<0.00001	0.00678	<0.0001	-	-	-
Fluorene by GCMS	0.000837	<0.00001	0.00837	<0.0001	-	-	-
Chrysene by GCMS	0.0000688	<0.00001	0.000688	<0.0001	-	-	-
Pyrene by GCMS	0.00124	<0.00001	0.0124	<0.0001	-	-	-
Benz(a)anthracene by GCMS	0.0000538	<0.00001	0.000538	<0.0001	-	-	-
Benzo(b)fluoranthene by GCMS	0.0000582	<0.00001	0.000582	<0.0001	-	-	-
Benzo(k)fluoranthene by GCMS	0.0000228	<0.00001	0.000228	<0.0001	-	-	-
Benzo(a)pyrene by GCMS	0.0000353	<0.000004	0.000353	<0.00004	-	-	-
Dibenzo(ah)anthracene by GCMS	0.0000143	<0.00001	0.000143	<0.0001	-	-	-
Benzo(ghi)perylene by GCMS	0.000011	<0.00001	0.00011	<0.0001	-	-	-
Indeno(123cd)pyrene by GCMS	0.0000196	<0.00001	0.000196	<0.0001	-	-	-

Leach Test Information

Date Prepared	05-Sep-2019
pH (pH Units)	11.05
Conductivity (µS/cm)	315.00
Temperature (°C)	21.70
Volume Leachant (Litres)	0.887

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.103	**Natural Moisture Content (%)**	14.9
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	87
Particle Size <4mm	>95%		

Case	
SDG	190828-36
Lab Sample Number(s)	20598407
Sampled Date	22-Aug-2019
Customer Sample Ref.	WS01
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
PAH Spec MS - Aqueous (W)							
PAH 16 EPA Total by GCMS	0.00617	<0.000164	0.0617	<0.00164	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	05-Sep-2019
pH (pH Units)	11.05
Conductivity (µS/cm)	315.00
Temperature (°C)	21.70
Volume Leachant (Litres)	0.887

Mcerts Certification does not apply to leachates

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Validated

CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.100	**Natural Moisture Content (%)**	11.1
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	90
Particle Size <4mm	>95%		

Case	
SDG	190828-36
Lab Sample Number(s)	20598427
Sampled Date	22-Aug-2019
Customer Sample Ref.	CPB5
Depth (m)	8.70 - 8.70

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Ammoniacal Nitrogen as N	0.737	<0.01	7.37	<0.1	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00253	<0.0005	0.0253	<0.005	-	-	-
Free Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Phenol by HPLC (W)	<0.002	<0.002	<0.02	<0.02	-	-	-
Cresols by HPLC (W)	<0.006	<0.006	<0.06	<0.06	-	-	-
Xylenols by HPLC (W)	<0.008	<0.008	<0.08	<0.08	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Total Monohydric Phenols (W)	<0.016	<0.016	<0.16	<0.16	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	<0.0003	<0.0003	<0.003	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	0.0049	<0.003	0.049	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	<0.001	<0.001	<0.01	<0.01	-	-	-
Vanadium	0.00783	<0.001	0.0783	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000222	<0.00001	0.000222	<0.0001	-	-	-
Acenaphthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000316	<0.000005	0.000316	<0.00005	-	-	-
Anthracene by GCMS	0.00000705	<0.000005	0.0000705	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000331	<0.000005	0.000331	<0.00005	-	-	-
Fluorene by GCMS	0.0000117	<0.000005	0.000117	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.0000218	<0.000005	0.000218	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-

Leach Test Information

Date Prepared	05-Sep-2019
pH (pH Units)	8.55
Conductivity (µS/cm)	140.00
Temperature (°C)	19.00
Volume Leachant (Litres)	0.890

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.100	**Natural Moisture Content (%)**	11.1
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	90
Particle Size <4mm	>95%		

Case	
SDG	190828-36
Lab Sample Number(s)	20598427
Sampled Date	22-Aug-2019
Customer Sample Ref.	CPB5
Depth (m)	8.70 - 8.70

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
PAH Spec MS - Aqueous (W)							
PAH 16 EPA Total by GCMS	0.000127	<0.000082	0.00127	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	0.011	<0.01	0.11	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	05-Sep-2019
pH (pH Units)	8.55
Conductivity (µS/cm)	140.00
Temperature (°C)	19.00
Volume Leachant (Litres)	0.890

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.195	**Natural Moisture Content (%)**	117
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	46
Particle Size <4mm	>95%		

Case	
SDG	190828-36
Lab Sample Number(s)	20598438
Sampled Date	22-Aug-2019
Customer Sample Ref.	CPB5
Depth (m)	7.80 - 7.80

Eluate Analysis	**C_2** Concⁿ in 10:1 eluate (mg/l)		**A_2** 10:1 concⁿ leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Ammoniacal Nitrogen as N	3.06	<0.01	30.6	<0.1	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00287	<0.0005	0.0287	<0.005	-	-	-
Free Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Phenol by HPLC (W)	<0.002	<0.002	<0.02	<0.02	-	-	-
Cresols by HPLC (W)	0.03	<0.006	0.3	<0.06	-	-	-
Xylenols by HPLC (W)	<0.008	<0.008	<0.08	<0.08	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Total Monohydric Phenols (W)	0.03	<0.016	0.3	<0.16	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	<0.0003	<0.0003	<0.003	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	0.0863	<0.003	0.863	<0.03	-	-	-
Nickel	0.000787	<0.0004	0.00787	<0.004	-	-	-
Selenium	<0.001	<0.001	<0.01	<0.01	-	-	-
Vanadium	0.00372	<0.001	0.0372	<0.01	-	-	-
Zinc	0.0105	<0.001	0.105	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000136	<0.00001	0.000136	<0.0001	-	-	-
Acenaphthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.000218	<0.000005	0.00218	<0.00005	-	-	-
Anthracene by GCMS	0.0000298	<0.000005	0.000298	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000441	<0.000005	0.000441	<0.00005	-	-	-
Fluorene by GCMS	0.0000167	<0.000005	0.000167	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.000116	<0.000005	0.00116	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.00000766	<0.000005	0.0000766	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-

Leach Test Information

Date Prepared	06-Sep-2019
pH (pH Units)	8.08
Conductivity (µS/cm)	401.00
Temperature (°C)	19.50
Volume Leachant (Litres)	0.795

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.195	**Natural Moisture Content (%)**	117
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	46
Particle Size <4mm	>95%		

Case	
SDG	190828-36
Lab Sample Number(s)	20598438
Sampled Date	22-Aug-2019
Customer Sample Ref.	CPB5
Depth (m)	7.80 - 7.80

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
PAH Spec MS - Aqueous (W)							
PAH 16 EPA Total by GCMS	0.000446	<0.000082	0.00446	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	06-Sep-2019
pH (pH Units)	8.08
Conductivity (µS/cm)	401.00
Temperature (°C)	19.50
Volume Leachant (Litres)	0.795

Mcerts Certification does not apply to leachates

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Validated

CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.140	**Natural Moisture Content (%)**	56.3
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	64
Particle Size <4mm	>95%		

Case	
SDG	190828-36
Lab Sample Number(s)	20598446
Sampled Date	22-Aug-2019
Customer Sample Ref.	CPB5
Depth (m)	4.00 - 4.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Ammoniacal Nitrogen as N	1.9	<0.01	19	<0.1	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00262	<0.0005	0.0262	<0.005	-	-	-
Free Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Phenol by HPLC (W)	<0.002	<0.002	<0.02	<0.02	-	-	-
Cresols by HPLC (W)	<0.006	<0.006	<0.06	<0.06	-	-	-
Xylenols by HPLC (W)	<0.008	<0.008	<0.08	<0.08	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Total Monohydric Phenols (W)	<0.016	<0.016	<0.16	<0.16	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	<0.0003	<0.0003	<0.003	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	0.0615	<0.003	0.615	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	0.00105	<0.001	0.0105	<0.01	-	-	-
Vanadium	0.00179	<0.001	0.0179	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Acenaphthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000152	<0.000005	0.000152	<0.00005	-	-	-
Anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Phenanthrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluorene by GCMS	0.00000566	<0.000005	0.0000566	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.0000107	<0.000005	0.000107	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-

Leach Test Information

Date Prepared	05-Sep-2019
pH (pH Units)	8.12
Conductivity (µS/cm)	266.00
Temperature (°C)	19.30
Volume Leachant (Litres)	0.849

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.140	**Natural Moisture Content (%)**	56.3
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	64
Particle Size <4mm	>95%		

Case	
SDG	190828-36
Lab Sample Number(s)	20598446
Sampled Date	22-Aug-2019
Customer Sample Ref.	CPB5
Depth (m)	4.00 - 4.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
PAH Spec MS - Aqueous (W)							
PAH 16 EPA Total by GCMS	<0.000082	<0.000082	<0.00082	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	05-Sep-2019
pH (pH Units)	8.12
Conductivity (µS/cm)	266.00
Temperature (°C)	19.30
Volume Leachant (Litres)	0.849

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.136	**Natural Moisture Content (%)**	51.5
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	66
Particle Size <4mm	>95%		

Case	
SDG	190828-36
Lab Sample Number(s)	20598466
Sampled Date	22-Aug-2019
Customer Sample Ref.	CPB13
Depth (m)	4.20 - 4.20

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Ammoniacal Nitrogen as N	0.905	<0.01	9.05	<0.1	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00237	<0.0005	0.0237	<0.005	-	-	-
Free Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Phenol by HPLC (W)	<0.002	<0.002	<0.02	<0.02	-	-	-
Cresols by HPLC (W)	<0.006	<0.006	<0.06	<0.06	-	-	-
Xylenols by HPLC (W)	<0.008	<0.008	<0.08	<0.08	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Total Monohydric Phenols (W)	<0.016	<0.016	<0.16	<0.16	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.00421	<0.0003	0.0421	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	0.0768	<0.003	0.768	<0.03	-	-	-
Nickel	0.00161	<0.0004	0.0161	<0.004	-	-	-
Selenium	0.00183	<0.001	0.0183	<0.01	-	-	-
Vanadium	<0.001	<0.001	<0.01	<0.01	-	-	-
Zinc	0.00297	<0.001	0.0297	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Acenaphthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000124	<0.000005	0.000124	<0.00005	-	-	-
Anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000116	<0.000005	0.000116	<0.00005	-	-	-
Fluorene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.00000884	<0.000005	0.0000884	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-

Leach Test Information

Date Prepared	05-Sep-2019
pH (pH Units)	8.49
Conductivity (µS/cm)	213.00
Temperature (°C)	19.50
Volume Leachant (Litres)	0.854

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.136	**Natural Moisture Content (%)**	51.5
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	66
Particle Size <4mm	>95%		

Case	
SDG	190828-36
Lab Sample Number(s)	20598466
Sampled Date	22-Aug-2019
Customer Sample Ref.	CPB13
Depth (m)	4.20 - 4.20

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
PAH Spec MS - Aqueous (W)							
PAH 16 EPA Total by GCMS	<0.000082	<0.000082	<0.00082	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	05-Sep-2019
pH (pH Units)	8.49
Conductivity (µS/cm)	213.00
Temperature (°C)	19.50
Volume Leachant (Litres)	0.854

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.134	**Natural Moisture Content (%)**	49.3
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	67
Particle Size <4mm	>95%		

Case	
SDG	190828-36
Lab Sample Number(s)	20598492
Sampled Date	22-Aug-2019
Customer Sample Ref.	CPB13
Depth (m)	2.20 - 2.20

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Ammoniacal Nitrogen as N	0.797	<0.01	7.97	<0.1	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00125	<0.0005	0.0125	<0.005	-	-	-
Free Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Phenol by HPLC (W)	<0.002	<0.002	<0.02	<0.02	-	-	-
Cresols by HPLC (W)	0.02	<0.006	0.2	<0.06	-	-	-
Xylenols by HPLC (W)	<0.008	<0.008	<0.08	<0.08	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Total Monohydric Phenols (W)	0.02	<0.016	0.2	<0.16	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.000948	<0.0003	0.00948	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	0.129	<0.003	1.29	<0.03	-	-	-
Nickel	0.00164	<0.0004	0.0164	<0.004	-	-	-
Selenium	0.00157	<0.001	0.0157	<0.01	-	-	-
Vanadium	<0.001	<0.001	<0.01	<0.01	-	-	-
Zinc	0.00386	<0.001	0.0386	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.518	<0.019	5.18	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000244	<0.00001	0.000244	<0.0001	-	-	-
Acenaphthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000251	<0.000005	0.000251	<0.00005	-	-	-
Anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000178	<0.000005	0.000178	<0.00005	-	-	-
Fluorene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.0000184	<0.000005	0.000184	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-

Leach Test Information

Date Prepared	07-Sep-2019
pH (pH Units)	7.95
Conductivity (µS/cm)	179.00
Temperature (°C)	8.90
Volume Leachant (Litres)	0.856

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.134	**Natural Moisture Content (%)**	49.3
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	67
Particle Size <4mm	>95%		

Case	
SDG	190828-36
Lab Sample Number(s)	20598492
Sampled Date	22-Aug-2019
Customer Sample Ref.	CPB13
Depth (m)	2.20 - 2.20

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
PAH Spec MS - Aqueous (W)							
PAH 16 EPA Total by GCMS	0.0000857	<0.000082	0.000857	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	07-Sep-2019
pH (pH Units)	7.95
Conductivity (µS/cm)	179.00
Temperature (°C)	8.90
Volume Leachant (Litres)	0.856

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.375	**Natural Moisture Content (%)**	317
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	24
Particle Size <4mm	>95%		

Case	
SDG	190828-36
Lab Sample Number(s)	20598505
Sampled Date	22-Aug-2019
Customer Sample Ref.	WS04
Depth (m)	3.40 - 3.80

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Ammoniacal Nitrogen as N	8.17	<0.01	81.7	<0.1	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00509	<0.0005	0.0509	<0.005	-	-	-
Free Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Phenol by HPLC (W)	<0.002	<0.002	<0.02	<0.02	-	-	-
Cresols by HPLC (W)	<0.006	<0.006	<0.06	<0.06	-	-	-
Xylenols by HPLC (W)	<0.008	<0.008	<0.08	<0.08	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Total Monohydric Phenols (W)	<0.016	<0.016	<0.16	<0.16	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	<0.0003	<0.0003	<0.003	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	0.134	<0.003	1.34	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	<0.001	<0.001	<0.01	<0.01	-	-	-
Vanadium	<0.001	<0.001	<0.01	<0.01	-	-	-
Zinc	0.00442	<0.001	0.0442	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000148	<0.00001	0.000148	<0.0001	-	-	-
Acenaphthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000331	<0.000005	0.000331	<0.00005	-	-	-
Anthracene by GCMS	0.00000537	<0.000005	0.0000537	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000148	<0.000005	0.000148	<0.00005	-	-	-
Fluorene by GCMS	0.00000923	<0.000005	0.0000923	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.0000209	<0.000005	0.000209	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-

Leach Test Information

Date Prepared	05-Sep-2019
pH (pH Units)	8.00
Conductivity (µS/cm)	359.00
Temperature (°C)	19.40
Volume Leachant (Litres)	0.615

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.375	**Natural Moisture Content (%)**	317
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	24
Particle Size <4mm	>95%		

Case	
SDG	190828-36
Lab Sample Number(s)	20598505
Sampled Date	22-Aug-2019
Customer Sample Ref.	WS04
Depth (m)	3.40 - 3.80

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
PAH Spec MS - Aqueous (W)							
PAH 16 EPA Total by GCMS	0.0000982	<0.000082	0.000982	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	05-Sep-2019
pH (pH Units)	8.00
Conductivity (µS/cm)	359.00
Temperature (°C)	19.40
Volume Leachant (Litres)	0.615

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.105	**Natural Moisture Content (%)**	16.3
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	86
Particle Size <4mm	>95%		

Case	
SDG	190828-36
Lab Sample Number(s)	20598531
Sampled Date	22-Aug-2019
Customer Sample Ref.	CPB13
Depth (m)	10.10 - 10.10

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Ammoniacal Nitrogen as N	1.44	<0.01	14.4	<0.1	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00137	<0.0005	0.0137	<0.005	-	-	-
Free Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Phenol by HPLC (W)	<0.002	<0.002	<0.02	<0.02	-	-	-
Cresols by HPLC (W)	<0.006	<0.006	<0.06	<0.06	-	-	-
Xylenols by HPLC (W)	<0.008	<0.008	<0.08	<0.08	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Total Monohydric Phenols (W)	<0.016	<0.016	<0.16	<0.16	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.00144	<0.0003	0.0144	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.000496	<0.0004	0.00496	<0.004	-	-	-
Selenium	0.00104	<0.001	0.0104	<0.01	-	-	-
Vanadium	0.00236	<0.001	0.0236	<0.01	-	-	-
Zinc	0.00404	<0.001	0.0404	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000284	<0.00002	0.000284	<0.0002	-	-	-
Acenaphthene by GCMS	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Acenaphthylene by GCMS	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Fluoranthene by GCMS	0.0000296	<0.00001	0.000296	<0.0001	-	-	-
Anthracene by GCMS	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Phenanthrene by GCMS	0.0000178	<0.00001	0.000178	<0.0001	-	-	-
Fluorene by GCMS	0.0000108	<0.00001	0.000108	<0.0001	-	-	-
Chrysene by GCMS	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Pyrene by GCMS	0.0000192	<0.00001	0.000192	<0.0001	-	-	-
Benz(a)anthracene by GCMS	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Benzo(b)fluoranthene by GCMS	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Benzo(k)fluoranthene by GCMS	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Benzo(a)pyrene by GCMS	<0.000004	<0.000004	<0.00004	<0.00004	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Benzo(ghi)perylene by GCMS	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Indeno(123cd)pyrene by GCMS	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-

Leach Test Information

Date Prepared	07-Sep-2019
pH (pH Units)	8.19
Conductivity (µS/cm)	202.00
Temperature (°C)	18.20
Volume Leachant (Litres)	0.885

Mcerts Certification does not apply to leachates
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CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.105	**Natural Moisture Content (%)**	16.3
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	86
Particle Size <4mm	>95%		

Case	
SDG	190828-36
Lab Sample Number(s)	20598531
Sampled Date	22-Aug-2019
Customer Sample Ref.	CPB13
Depth (m)	10.10 - 10.10

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
PAH Spec MS - Aqueous (W)							
PAH 16 EPA Total by GCMS	<0.000164	<0.000164	<0.00164	<0.00164	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	07-Sep-2019
pH (pH Units)	8.19
Conductivity (µS/cm)	202.00
Temperature (°C)	18.20
Volume Leachant (Litres)	0.885

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.099	**Natural Moisture Content (%)**	9.89
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	91
Particle Size <4mm	>95%		

Case	
SDG	190828-36
Lab Sample Number(s)	20598541
Sampled Date	20-Aug-2019
Customer Sample Ref.	WSBP108
Depth (m)	0.30 - 0.30

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Ammoniacal Nitrogen as N	0.0142	<0.01	0.142	<0.1	-	-	-
Total Cyanide (W)	0.08	<0.05	0.8	<0.5	-	-	-
Arsenic	0.0111	<0.0005	0.111	<0.005	-	-	-
Free Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Phenol by HPLC (W)	<0.002	<0.002	<0.02	<0.02	-	-	-
Cresols by HPLC (W)	<0.006	<0.006	<0.06	<0.06	-	-	-
Xylenols by HPLC (W)	<0.008	<0.008	<0.08	<0.08	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Total Monohydric Phenols (W)	<0.016	<0.016	<0.16	<0.16	-	-	-
Chromium	0.00231	<0.001	0.0231	<0.01	-	-	-
Copper	0.00277	<0.0003	0.0277	<0.003	-	-	-
Lead	0.000236	<0.0002	0.00236	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	0.00474	<0.001	0.0474	<0.01	-	-	-
Vanadium	0.0428	<0.001	0.428	<0.01	-	-	-
Zinc	0.00105	<0.001	0.0105	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.503	<0.019	5.03	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000271	<0.00001	0.000271	<0.0001	-	-	-
Acenaphthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Acenaphthylene by GCMS	0.0000054	<0.000005	0.000054	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000594	<0.000005	0.000594	<0.00005	-	-	-
Anthracene by GCMS	0.00000733	<0.000005	0.0000733	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000446	<0.000005	0.000446	<0.00005	-	-	-
Fluorene by GCMS	0.00000587	<0.000005	0.0000587	<0.00005	-	-	-
Chrysene by GCMS	0.00000779	<0.000005	0.0000779	<0.00005	-	-	-
Pyrene by GCMS	0.0000456	<0.000005	0.000456	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.000021	<0.000005	0.00021	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.0000151	<0.000005	0.000151	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.00000954	<0.000005	0.0000954	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.00000616	<0.000002	0.0000616	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-

Leach Test Information

Date Prepared	05-Sep-2019
pH (pH Units)	8.52
Conductivity (µS/cm)	143.00
Temperature (°C)	19.60
Volume Leachant (Litres)	0.891

Mcerts Certification does not apply to leachates
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CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.099	**Natural Moisture Content (%)**	9.89
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	91
Particle Size <4mm	>95%		

Case	
SDG	190828-36
Lab Sample Number(s)	20598541
Sampled Date	20-Aug-2019
Customer Sample Ref.	WSBP108
Depth (m)	0.30 - 0.30

Eluate Analysis	**C_2** Concⁿ in 10:1 eluate (mg/l)		**A_2** 10:1 concⁿ leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
PAH Spec MS - Aqueous (W)							
PAH 16 EPA Total by GCMS	0.000255	<0.000082	0.00255	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	0.032	<0.01	0.32	<0.1	-	-	-
Toluene by GC	0.004	<0.004	0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	05-Sep-2019
pH (pH Units)	8.52
Conductivity (µS/cm)	143.00
Temperature (°C)	19.60
Volume Leachant (Litres)	0.891

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.103	**Natural Moisture Content (%)**	14.9
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	87
Particle Size <4mm	>95%		

Case	
SDG	190828-36
Lab Sample Number(s)	20598552
Sampled Date	20-Aug-2019
Customer Sample Ref.	WSBP108
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Ammoniacal Nitrogen as N	0.0474	<0.01	0.474	<0.1	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00347	<0.0005	0.0347	<0.005	-	-	-
Free Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Phenol by HPLC (W)	<0.002	<0.002	<0.02	<0.02	-	-	-
Cresols by HPLC (W)	<0.006	<0.006	<0.06	<0.06	-	-	-
Xylenols by HPLC (W)	<0.008	<0.008	<0.08	<0.08	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Total Monohydric Phenols (W)	<0.016	<0.016	<0.16	<0.16	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	<0.0003	<0.0003	<0.003	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	0.21	<0.003	2.1	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	0.00513	<0.001	0.0513	<0.01	-	-	-
Vanadium	0.0074	<0.001	0.074	<0.01	-	-	-
Zinc	0.00135	<0.001	0.0135	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Acenaphthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Anthracene by GCMS	0.0000082	<0.000005	0.000082	<0.00005	-	-	-
Phenanthrene by GCMS	0.00001	<0.000005	0.0001	<0.00005	-	-	-
Fluorene by GCMS	0.00000634	<0.000005	0.0000634	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.00000764	<0.000005	0.0000764	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-

Leach Test Information

Date Prepared	05-Sep-2019
pH (pH Units)	7.44
Conductivity (µS/cm)	484.00
Temperature (°C)	19.70
Volume Leachant (Litres)	0.887

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.103	**Natural Moisture Content (%)**	14.9
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	87
Particle Size <4mm	>95%		

Case	
SDG	190828-36
Lab Sample Number(s)	20598552
Sampled Date	20-Aug-2019
Customer Sample Ref.	WSBP108
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Concⁿ in 10:1 eluate (mg/l)		**A_2** 10:1 concⁿ leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
PAH Spec MS - Aqueous (W)							
PAH 16 EPA Total by GCMS	<0.000082	<0.000082	<0.00082	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	05-Sep-2019
pH (pH Units)	7.44
Conductivity (µS/cm)	484.00
Temperature (°C)	19.70
Volume Leachant (Litres)	0.887

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.096	**Natural Moisture Content (%)**	6.95
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	93.5
Particle Size <4mm	>95%		

Case	
SDG	190828-36
Lab Sample Number(s)	20598585
Sampled Date	20-Aug-2019
Customer Sample Ref.	WSBP104
Depth (m)	0.30 - 0.30

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Ammoniacal Nitrogen as N	0.0112	<0.01	0.112	<0.1	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.0044	<0.0005	0.044	<0.005	-	-	-
Free Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Phenol by HPLC (W)	<0.002	<0.002	<0.02	<0.02	-	-	-
Cresols by HPLC (W)	<0.006	<0.006	<0.06	<0.06	-	-	-
Xylenols by HPLC (W)	<0.008	<0.008	<0.08	<0.08	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Total Monohydric Phenols (W)	<0.016	<0.016	<0.16	<0.16	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	<0.0003	<0.0003	<0.003	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	0.00202	<0.001	0.0202	<0.01	-	-	-
Vanadium	0.0514	<0.001	0.514	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.000068	<0.00001	0.00068	<0.0001	-	-	-
Acenaphthene by GCMS	0.0000075	<0.000005	0.000075	<0.00005	-	-	-
Acenaphthylene by GCMS	0.00000718	<0.000005	0.0000718	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000716	<0.000005	0.000716	<0.00005	-	-	-
Anthracene by GCMS	0.0000153	<0.000005	0.000153	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000369	<0.000005	0.000369	<0.00005	-	-	-
Fluorene by GCMS	0.00000835	<0.000005	0.0000835	<0.00005	-	-	-
Chrysene by GCMS	0.0000232	<0.000005	0.000232	<0.00005	-	-	-
Pyrene by GCMS	0.0000523	<0.000005	0.000523	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.0000207	<0.000005	0.000207	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.0000446	<0.000005	0.000446	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.0000159	<0.000005	0.000159	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.0000226	<0.000002	0.000226	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	0.00000705	<0.000005	0.0000705	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	0.0000182	<0.000005	0.000182	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	0.0000236	<0.000005	0.000236	<0.00005	-	-	-

Leach Test Information

Date Prepared	07-Sep-2019
pH (pH Units)	9.25
Conductivity (µS/cm)	128.00
Temperature (°C)	21.80
Volume Leachant (Litres)	0.894

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.096	**Natural Moisture Content (%)**	6.95
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	93.5
Particle Size <4mm	>95%		

Case	
SDG	190828-36
Lab Sample Number(s)	20598585
Sampled Date	20-Aug-2019
Customer Sample Ref.	WSBP104
Depth (m)	0.30 - 0.30

Eluate Analysis	**C_2** Concⁿ in 10:1 eluate (mg/l)		**A_2** 10:1 concⁿ leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
PAH Spec MS - Aqueous (W)							
PAH 16 EPA Total by GCMS	0.000443	<0.000082	0.00443	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	0.019	<0.01	0.19	<0.1	-	-	-
Total Aliphatics >C12-C35	0.019	<0.01	0.19	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	0.019	<0.01	0.19	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	0.019	<0.01	0.19	<0.1	-	-	-

Leach Test Information

Date Prepared	07-Sep-2019
pH (pH Units)	9.25
Conductivity (µS/cm)	128.00
Temperature (°C)	21.80
Volume Leachant (Litres)	0.894

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.105	**Natural Moisture Content (%)**	16.3
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	86
Particle Size <4mm	>95%		

Case	
SDG	190828-36
Lab Sample Number(s)	20598597
Sampled Date	20-Aug-2019
Customer Sample Ref.	WSBP104
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Mercury Dissolved (CVAF)	0.0000684	<0.00001	0.000684	<0.0001	-	-	-
Ammoniacal Nitrogen as N	0.0503	<0.01	0.503	<0.1	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.000528	<0.0005	0.00528	<0.005	-	-	-
Free Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Phenol by HPLC (W)	<0.002	<0.002	<0.02	<0.02	-	-	-
Cresols by HPLC (W)	<0.006	<0.006	<0.06	<0.06	-	-	-
Xylenols by HPLC (W)	<0.008	<0.008	<0.08	<0.08	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Total Monohydric Phenols (W)	<0.016	<0.016	<0.16	<0.16	-	-	-
Chromium	0.0011	<0.001	0.011	<0.01	-	-	-
Copper	<0.0003	<0.0003	<0.003	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	0.00165	<0.001	0.0165	<0.01	-	-	-
Vanadium	0.0491	<0.001	0.491	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000884	<0.00001	0.000884	<0.0001	-	-	-
Acenaphthene by GCMS	0.0000578	<0.000005	0.000578	<0.00005	-	-	-
Acenaphthylene by GCMS	0.00000897	<0.000005	0.0000897	<0.00005	-	-	-
Fluoranthene by GCMS	0.000376	<0.000005	0.00376	<0.00005	-	-	-
Anthracene by GCMS	0.0000305	<0.000005	0.000305	<0.00005	-	-	-
Phenanthrene by GCMS	0.000114	<0.000005	0.00114	<0.00005	-	-	-
Fluorene by GCMS	0.0000214	<0.000005	0.000214	<0.00005	-	-	-
Chrysene by GCMS	0.0000226	<0.000005	0.000226	<0.00005	-	-	-
Pyrene by GCMS	0.00029	<0.000005	0.0029	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.0000176	<0.000005	0.000176	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.00000698	<0.000005	0.0000698	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-

Leach Test Information

Date Prepared	07-Sep-2019
pH (pH Units)	10.84
Conductivity (µS/cm)	511.00
Temperature (°C)	22.00
Volume Leachant (Litres)	0.885

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.105	**Natural Moisture Content (%)**	16.3
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	86
Particle Size <4mm	>95%		

Case	
SDG	190828-36
Lab Sample Number(s)	20598597
Sampled Date	20-Aug-2019
Customer Sample Ref.	WSBP104
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
PAH Spec MS - Aqueous (W)							
PAH 16 EPA Total by GCMS	0.00103	<0.000082	0.0103	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	07-Sep-2019
pH (pH Units)	10.84
Conductivity (µS/cm)	511.00
Temperature (°C)	22.00
Volume Leachant (Litres)	0.885

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.140	**Natural Moisture Content (%)**	56.3
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	64
Particle Size <4mm	>95%		

Case	
SDG	190828-36
Lab Sample Number(s)	20598613
Sampled Date	20-Aug-2019
Customer Sample Ref.	WSBP104
Depth (m)	1.80 - 1.80

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Ammoniacal Nitrogen as N	9.4	<0.01	94	<0.1	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.0225	<0.0005	0.225	<0.005	-	-	-
Free Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Phenol by HPLC (W)	<0.002	<0.002	<0.02	<0.02	-	-	-
Cresols by HPLC (W)	<0.006	<0.006	<0.06	<0.06	-	-	-
Xylenols by HPLC (W)	<0.008	<0.008	<0.08	<0.08	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Total Monohydric Phenols (W)	<0.016	<0.016	<0.16	<0.16	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.00349	<0.0003	0.0349	<0.003	-	-	-
Lead	0.000323	<0.0002	0.00323	<0.002	-	-	-
Manganese	0.246	<0.003	2.46	<0.03	-	-	-
Nickel	0.00357	<0.0004	0.0357	<0.004	-	-	-
Selenium	0.00148	<0.001	0.0148	<0.01	-	-	-
Vanadium	0.0052	<0.001	0.052	<0.01	-	-	-
Zinc	0.00224	<0.001	0.0224	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.457	<0.019	4.57	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Acenaphthene by GCMS	0.0000264	<0.000025	0.000264	<0.00025	-	-	-
Acenaphthylene by GCMS	<0.000025	<0.000025	<0.00025	<0.00025	-	-	-
Fluoranthene by GCMS	0.0000518	<0.000025	0.000518	<0.00025	-	-	-
Anthracene by GCMS	<0.000025	<0.000025	<0.00025	<0.00025	-	-	-
Phenanthrene by GCMS	0.0000279	<0.000025	0.000279	<0.00025	-	-	-
Fluorene by GCMS	0.000029	<0.000025	0.00029	<0.00025	-	-	-
Chrysene by GCMS	<0.000025	<0.000025	<0.00025	<0.00025	-	-	-
Pyrene by GCMS	0.0000459	<0.000025	0.000459	<0.00025	-	-	-
Benz(a)anthracene by GCMS	<0.000025	<0.000025	<0.00025	<0.00025	-	-	-
Benzo(b)fluoranthene by GCMS	0.000029	<0.000025	0.00029	<0.00025	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000025	<0.000025	<0.00025	<0.00025	-	-	-
Benzo(a)pyrene by GCMS	0.0000284	<0.00001	0.000284	<0.0001	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000025	<0.000025	<0.00025	<0.00025	-	-	-
Benzo(ghi)perylene by GCMS	<0.000025	<0.000025	<0.00025	<0.00025	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000025	<0.000025	<0.00025	<0.00025	-	-	-

Leach Test Information

Date Prepared	06-Sep-2019
pH (pH Units)	7.28
Conductivity (µS/cm)	521.00
Temperature (°C)	21.90
Volume Leachant (Litres)	0.849

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.140	**Natural Moisture Content (%)**	56.3
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	64
Particle Size <4mm	>95%		

Case	
SDG	190828-36
Lab Sample Number(s)	20598613
Sampled Date	20-Aug-2019
Customer Sample Ref.	WSBP104
Depth (m)	1.80 - 1.80

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
PAH Spec MS - Aqueous (W)							
PAH 16 EPA Total by GCMS	<0.00041	<0.00041	<0.0041	<0.0041	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	06-Sep-2019
pH (pH Units)	7.28
Conductivity (µS/cm)	521.00
Temperature (°C)	21.90
Volume Leachant (Litres)	0.849

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.097	**Natural Moisture Content (%)**	8.11
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	92.5
Particle Size <4mm	>95%		

Case	
SDG	190828-36
Lab Sample Number(s)	20598625
Sampled Date	21-Aug-2019
Customer Sample Ref.	WSBP109
Depth (m)	0.30 - 0.30

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Ammoniacal Nitrogen as N	0.0147	<0.01	0.147	<0.1	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00412	<0.0005	0.0412	<0.005	-	-	-
Free Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Phenol by HPLC (W)	<0.002	<0.002	<0.02	<0.02	-	-	-
Cresols by HPLC (W)	<0.006	<0.006	<0.06	<0.06	-	-	-
Xylenols by HPLC (W)	<0.008	<0.008	<0.08	<0.08	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Total Monohydric Phenols (W)	<0.016	<0.016	<0.16	<0.16	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	<0.0003	<0.0003	<0.003	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	0.00208	<0.001	0.0208	<0.01	-	-	-
Vanadium	0.0253	<0.001	0.253	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000822	<0.00002	0.000822	<0.0002	-	-	-
Acenaphthene by GCMS	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Acenaphthylene by GCMS	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Fluoranthene by GCMS	0.0000344	<0.00001	0.000344	<0.0001	-	-	-
Anthracene by GCMS	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Phenanthrene by GCMS	0.0000243	<0.00001	0.000243	<0.0001	-	-	-
Fluorene by GCMS	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Chrysene by GCMS	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Pyrene by GCMS	0.0000261	<0.00001	0.000261	<0.0001	-	-	-
Benz(a)anthracene by GCMS	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Benzo(b)fluoranthene by GCMS	0.0000232	<0.00001	0.000232	<0.0001	-	-	-
Benzo(k)fluoranthene by GCMS	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Benzo(a)pyrene by GCMS	0.0000103	<0.000004	0.000103	<0.00004	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Benzo(ghi)perylene by GCMS	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Indeno(123cd)pyrene by GCMS	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-

Leach Test Information

Date Prepared	05-Sep-2019
pH (pH Units)	8.95
Conductivity (µS/cm)	110.00
Temperature (°C)	21.80
Volume Leachant (Litres)	0.893

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.097	**Natural Moisture Content (%)**	8.11
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	92.5
Particle Size <4mm	>95%		

Case	
SDG	190828-36
Lab Sample Number(s)	20598625
Sampled Date	21-Aug-2019
Customer Sample Ref.	WSBP109
Depth (m)	0.30 - 0.30

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
PAH Spec MS - Aqueous (W)							
PAH 16 EPA Total by GCMS	0.000201	<0.000164	0.00201	<0.00164	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	05-Sep-2019
pH (pH Units)	8.95
Conductivity (µS/cm)	110.00
Temperature (°C)	21.80
Volume Leachant (Litres)	0.893

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.098	**Natural Moisture Content (%)**	9.77
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	91.1
Particle Size <4mm	>95%		

Case	
SDG	190828-36
Lab Sample Number(s)	20598637
Sampled Date	20-Aug-2019
Customer Sample Ref.	BHCP105
Depth (m)	0.30 - 0.30

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Ammoniacal Nitrogen as N	0.0143	<0.01	0.143	<0.1	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00144	<0.0005	0.0144	<0.005	-	-	-
Free Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Phenol by HPLC (W)	<0.002	<0.002	<0.02	<0.02	-	-	-
Cresols by HPLC (W)	<0.006	<0.006	<0.06	<0.06	-	-	-
Xylenols by HPLC (W)	<0.008	<0.008	<0.08	<0.08	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Total Monohydric Phenols (W)	<0.016	<0.016	<0.16	<0.16	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.00202	<0.0003	0.0202	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	0.00615	<0.001	0.0615	<0.01	-	-	-
Vanadium	0.0708	<0.001	0.708	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.000133	<0.00001	0.00133	<0.0001	-	-	-
Acenaphthene by GCMS	0.0000539	<0.000005	0.000539	<0.00005	-	-	-
Acenaphthylene by GCMS	0.0000283	<0.000005	0.000283	<0.00005	-	-	-
Fluoranthene by GCMS	0.00033	<0.000005	0.0033	<0.00005	-	-	-
Anthracene by GCMS	0.0000788	<0.000005	0.000788	<0.00005	-	-	-
Phenanthrene by GCMS	0.000372	<0.000005	0.00372	<0.00005	-	-	-
Fluorene by GCMS	0.000115	<0.000005	0.00115	<0.00005	-	-	-
Chrysene by GCMS	0.00000692	<0.000005	0.0000692	<0.00005	-	-	-
Pyrene by GCMS	0.000266	<0.000005	0.00266	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.0000168	<0.000005	0.000168	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.00000964	<0.000005	0.0000964	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.00000499	<0.000002	0.0000499	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-

Leach Test Information

Date Prepared	06-Sep-2019
pH (pH Units)	10.20
Conductivity (µS/cm)	356.00
Temperature (°C)	19.60
Volume Leachant (Litres)	0.891

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.098	**Natural Moisture Content (%)**	9.77
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	91.1
Particle Size <4mm	>95%		

Case	
SDG	190828-36
Lab Sample Number(s)	20598637
Sampled Date	20-Aug-2019
Customer Sample Ref.	BHCP105
Depth (m)	0.30 - 0.30

Eluate Analysis	**C_2** Concⁿ in 10:1 eluate (mg/l)		**A_2** 10:1 concⁿ leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
PAH Spec MS - Aqueous (W)							
PAH 16 EPA Total by GCMS	0.00142	<0.000082	0.0142	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	06-Sep-2019
pH (pH Units)	10.20
Conductivity (µS/cm)	356.00
Temperature (°C)	19.60
Volume Leachant (Litres)	0.891

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.101	**Natural Moisture Content (%)**	12.4
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	89
Particle Size <4mm	>95%		

Case	
SDG	190828-36
Lab Sample Number(s)	20598655
Sampled Date	20-Aug-2019
Customer Sample Ref.	BHCP105
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Ammoniacal Nitrogen as N	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00274	<0.0005	0.0274	<0.005	-	-	-
Free Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Phenol by HPLC (W)	<0.002	<0.002	<0.02	<0.02	-	-	-
Cresols by HPLC (W)	<0.006	<0.006	<0.06	<0.06	-	-	-
Xylenols by HPLC (W)	<0.008	<0.008	<0.08	<0.08	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Total Monohydric Phenols (W)	<0.016	<0.016	<0.16	<0.16	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.00224	<0.0003	0.0224	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	0.0105	<0.001	0.105	<0.01	-	-	-
Vanadium	0.00479	<0.001	0.0479	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.000481	<0.00001	0.00481	<0.0001	-	-	-
Acenaphthene by GCMS	0.000407	<0.000005	0.00407	<0.00005	-	-	-
Acenaphthylene by GCMS	0.000112	<0.000005	0.00112	<0.00005	-	-	-
Fluoranthene by GCMS	0.00018	<0.000005	0.0018	<0.00005	-	-	-
Anthracene by GCMS	0.0000972	<0.000005	0.000972	<0.00005	-	-	-
Phenanthrene by GCMS	0.000761	<0.000005	0.00761	<0.00005	-	-	-
Fluorene by GCMS	0.00068	<0.000005	0.0068	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.000157	<0.000005	0.00157	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-

Leach Test Information

Date Prepared	06-Sep-2019
pH (pH Units)	8.89
Conductivity (µS/cm)	154.00
Temperature (°C)	19.50
Volume Leachant (Litres)	0.889

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.101	**Natural Moisture Content (%)**	12.4
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	89
Particle Size <4mm	>95%		

Case	
SDG	190828-36
Lab Sample Number(s)	20598655
Sampled Date	20-Aug-2019
Customer Sample Ref.	BHCP105
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
PAH Spec MS - Aqueous (W)							
PAH 16 EPA Total by GCMS	0.00288	<0.000082	0.0288	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	0.126	<0.05	1.26	<0.5	-	-	-
Aliphatics C5-C6	0.02	<0.01	0.2	<0.1	-	-	-
Aliphatics >C6-C8	0.021	<0.01	0.21	<0.1	-	-	-
Aliphatics >C8-C10	0.015	<0.01	0.15	<0.1	-	-	-
Aliphatics >C10-C12	0.033	<0.01	0.33	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	0.011	<0.01	0.11	<0.1	-	-	-
Aromatics >EC10-EC12	0.022	<0.01	0.22	<0.1	-	-	-
Aromatics >EC12-EC16	0.073	<0.01	0.73	<0.1	-	-	-
Aromatics >EC16-EC21	0.032	<0.01	0.32	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	0.105	<0.01	1.05	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	0.231	<0.01	2.31	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	06-Sep-2019
pH (pH Units)	8.89
Conductivity (µS/cm)	154.00
Temperature (°C)	19.50
Volume Leachant (Litres)	0.889

Mcerts Certification does not apply to leachates

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Validated

CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.098	**Natural Moisture Content (%)**	8.81
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	91.9
Particle Size <4mm	>95%		

Case	
SDG	190828-36
Lab Sample Number(s)	20598666
Sampled Date	20-Aug-2019
Customer Sample Ref.	BHCP105
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Ammoniacal Nitrogen as N	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00275	<0.0005	0.0275	<0.005	-	-	-
Free Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Phenol by HPLC (W)	<0.002	<0.002	<0.02	<0.02	-	-	-
Cresols by HPLC (W)	<0.006	<0.006	<0.06	<0.06	-	-	-
Xylenols by HPLC (W)	<0.008	<0.008	<0.08	<0.08	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Total Monohydric Phenols (W)	<0.016	<0.016	<0.16	<0.16	-	-	-
Chromium	0.0018	<0.001	0.018	<0.01	-	-	-
Copper	0.00232	<0.0003	0.0232	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	0.0111	<0.001	0.111	<0.01	-	-	-
Vanadium	0.00722	<0.001	0.0722	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.000316	<0.00001	0.00316	<0.0001	-	-	-
Acenaphthene by GCMS	0.00034	<0.000005	0.0034	<0.00005	-	-	-
Acenaphthylene by GCMS	0.0000944	<0.000005	0.000944	<0.00005	-	-	-
Fluoranthene by GCMS	0.000177	<0.000005	0.00177	<0.00005	-	-	-
Anthracene by GCMS	0.0000896	<0.000005	0.000896	<0.00005	-	-	-
Phenanthrene by GCMS	0.000721	<0.000005	0.00721	<0.00005	-	-	-
Fluorene by GCMS	0.000585	<0.000005	0.00585	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.000149	<0.000005	0.00149	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.00000552	<0.000005	0.0000552	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-

Leach Test Information

Date Prepared	06-Sep-2019
pH (pH Units)	10.02
Conductivity (µS/cm)	147.00
Temperature (°C)	19.40
Volume Leachant (Litres)	0.892

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.098	**Natural Moisture Content (%)**	8.81
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	91.9
Particle Size <4mm	>95%		

Case	
SDG	190828-36
Lab Sample Number(s)	20598666
Sampled Date	20-Aug-2019
Customer Sample Ref.	BHCP105
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Concⁿ in 10:1 eluate (mg/l)		**A_2** 10:1 concⁿ leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
PAH Spec MS - Aqueous (W)							
PAH 16 EPA Total by GCMS	0.00248	<0.000082	0.0248	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	0.172	<0.05	1.72	<0.5	-	-	-
Aliphatics C5-C6	0.025	<0.01	0.25	<0.1	-	-	-
Aliphatics >C6-C8	0.029	<0.01	0.29	<0.1	-	-	-
Aliphatics >C8-C10	0.021	<0.01	0.21	<0.1	-	-	-
Aliphatics >C10-C12	0.046	<0.01	0.46	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	0.016	<0.01	0.16	<0.1	-	-	-
Aromatics >EC10-EC12	0.031	<0.01	0.31	<0.1	-	-	-
Aromatics >EC12-EC16	0.058	<0.01	0.58	<0.1	-	-	-
Aromatics >EC16-EC21	0.027	<0.01	0.27	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	0.085	<0.01	0.85	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	0.257	<0.01	2.57	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	06-Sep-2019
pH (pH Units)	10.02
Conductivity (µS/cm)	147.00
Temperature (°C)	19.40
Volume Leachant (Litres)	0.892

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.098	**Natural Moisture Content (%)**	8.23
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	92.4
Particle Size <4mm	>95%		

Case	
SDG	190828-36
Lab Sample Number(s)	20598682
Sampled Date	20-Aug-2019
Customer Sample Ref.	WSBP105
Depth (m)	0.30 - 0.30

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Ammoniacal Nitrogen as N	0.0117	<0.01	0.117	<0.1	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	<0.003	<0.003	<0.03	<0.03	-	-	-
Free Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Phenol by HPLC (W)	<0.002	<0.002	<0.02	<0.02	-	-	-
Cresols by HPLC (W)	<0.006	<0.006	<0.06	<0.06	-	-	-
Xylenols by HPLC (W)	<0.008	<0.008	<0.08	<0.08	-	-	-
Cadmium	<0.00048	<0.00048	<0.0048	<0.0048	-	-	-
Total Monohydric Phenols (W)	<0.016	<0.016	<0.16	<0.16	-	-	-
Chromium	<0.006	<0.006	<0.06	<0.06	-	-	-
Copper	<0.0018	<0.0018	<0.018	<0.018	-	-	-
Lead	<0.0012	<0.0012	<0.012	<0.012	-	-	-
Manganese	<0.018	<0.018	<0.18	<0.18	-	-	-
Nickel	<0.0024	<0.0024	<0.024	<0.024	-	-	-
Selenium	0.0107	<0.006	0.107	<0.06	-	-	-
Vanadium	0.0394	<0.006	0.394	<0.06	-	-	-
Zinc	<0.006	<0.006	<0.06	<0.06	-	-	-
Iron (Dis.Filt) mg/l	<0.114	<0.114	<1.14	<1.14	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.000269	<0.00001	0.00269	<0.0001	-	-	-
Acenaphthene by GCMS	0.00165	<0.000005	0.0165	<0.00005	-	-	-
Acenaphthylene by GCMS	0.0000571	<0.000005	0.000571	<0.00005	-	-	-
Fluoranthene by GCMS	0.000999	<0.000005	0.00999	<0.00005	-	-	-
Anthracene by GCMS	0.000303	<0.000005	0.00303	<0.00005	-	-	-
Phenanthrene by GCMS	0.000861	<0.000005	0.00861	<0.00005	-	-	-
Fluorene by GCMS	0.000568	<0.000005	0.00568	<0.00005	-	-	-
Chrysene by GCMS	0.0000413	<0.000005	0.000413	<0.00005	-	-	-
Pyrene by GCMS	0.000636	<0.000005	0.00636	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.0000225	<0.000005	0.000225	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.0000127	<0.000005	0.000127	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.00000515	<0.000005	0.0000515	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.00000608	<0.000002	0.0000608	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-

Leach Test Information

Date Prepared	06-Sep-2019
pH (pH Units)	11.07
Conductivity (µS/cm)	636.00
Temperature (°C)	19.70
Volume Leachant (Litres)	0.893

Mcerts Certification does not apply to leachates

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Validated

CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.098	**Natural Moisture Content (%)**	8.23
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	92.4
Particle Size <4mm	>95%		

Case	
SDG	190828-36
Lab Sample Number(s)	20598682
Sampled Date	20-Aug-2019
Customer Sample Ref.	WSBP105
Depth (m)	0.30 - 0.30

Eluate Analysis	**C_2** Concⁿ in 10:1 eluate (mg/l)		**A_2** 10:1 concⁿ leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
PAH Spec MS - Aqueous (W)							
PAH 16 EPA Total by GCMS	0.00543	<0.000082	0.0543	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	0.131	<0.05	1.31	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	0.011	<0.01	0.11	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	0.078	<0.01	0.78	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	0.022	<0.01	0.22	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	0.04	<0.01	0.4	<0.1	-	-	-
Aromatics >EC16-EC21	0.052	<0.01	0.52	<0.1	-	-	-
Aromatics >EC21-EC35	0.016	<0.01	0.16	<0.1	-	-	-
Total Aromatics >EC12-EC35	0.108	<0.01	1.08	<0.1	-	-	-
Benzene by GC	0.078	<0.007	0.78	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	0.239	<0.01	2.39	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	0.011	<0.008	0.11	<0.08	-	-	-
o Xylene by GC	0.005	<0.003	0.05	<0.03	-	-	-
Sum m&p and o Xylene by GC	0.016	<0.011	0.16	<0.11	-	-	-
Sum of BTEX by GC	0.094	<0.028	0.94	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	06-Sep-2019
pH (pH Units)	11.07
Conductivity (µS/cm)	636.00
Temperature (°C)	19.70
Volume Leachant (Litres)	0.893

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.096	**Natural Moisture Content (%)**	6.95
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	93.5
Particle Size <4mm	>95%		

Case	
SDG	190828-36
Lab Sample Number(s)	20598696
Sampled Date	20-Aug-2019
Customer Sample Ref.	WSBP105
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Mercury Dissolved (CVAF)	0.000127	<0.00001	0.00127	<0.0001	-	-	-
Ammoniacal Nitrogen as N	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.0019	<0.0005	0.019	<0.005	-	-	-
Free Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Phenol by HPLC (W)	<0.002	<0.002	<0.02	<0.02	-	-	-
Cresols by HPLC (W)	0.01	<0.006	0.1	<0.06	-	-	-
Xylenols by HPLC (W)	<0.008	<0.008	<0.08	<0.08	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Total Monohydric Phenols (W)	<0.016	<0.016	<0.16	<0.16	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	<0.0003	<0.0003	<0.003	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	0.00368	<0.003	0.0368	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	0.00335	<0.001	0.0335	<0.01	-	-	-
Vanadium	0.178	<0.001	1.78	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000106	<0.00001	0.000106	<0.0001	-	-	-
Acenaphthene by GCMS	0.00293	<0.000005	0.0293	<0.00005	-	-	-
Acenaphthylene by GCMS	0.0000933	<0.000005	0.000933	<0.00005	-	-	-
Fluoranthene by GCMS	0.00214	<0.000005	0.0214	<0.00005	-	-	-
Anthracene by GCMS	0.0000399	<0.000005	0.000399	<0.00005	-	-	-
Phenanthrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluorene by GCMS	0.000109	<0.000005	0.00109	<0.00005	-	-	-
Chrysene by GCMS	0.0000769	<0.000005	0.000769	<0.00005	-	-	-
Pyrene by GCMS	0.00158	<0.000005	0.0158	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.0000592	<0.000005	0.000592	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.0000223	<0.000005	0.000223	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.000013	<0.000005	0.00013	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.0000124	<0.000002	0.000124	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-

Leach Test Information

Date Prepared	05-Sep-2019
pH (pH Units)	10.55
Conductivity (µS/cm)	332.00
Temperature (°C)	19.70
Volume Leachant (Litres)	0.894

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.096	**Natural Moisture Content (%)**	6.95
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	93.5
Particle Size <4mm	>95%		

Case	
SDG	190828-36
Lab Sample Number(s)	20598696
Sampled Date	20-Aug-2019
Customer Sample Ref.	WSBP105
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
PAH Spec MS - Aqueous (W)							
PAH 16 EPA Total by GCMS	0.00708	<0.000082	0.0708	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	0.013	<0.01	0.13	<0.1	-	-	-
Aromatics >EC16-EC21	0.025	<0.01	0.25	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	0.038	<0.01	0.38	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	0.042	<0.01	0.42	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	05-Sep-2019
pH (pH Units)	10.55
Conductivity (µS/cm)	332.00
Temperature (°C)	19.70
Volume Leachant (Litres)	0.894

Mcerts Certification does not apply to leachates

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Validated

CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.096	**Natural Moisture Content (%)**	6.27
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	94.1
Particle Size <4mm	>95%		

Case	
SDG	190828-36
Lab Sample Number(s)	20598715
Sampled Date	20-Aug-2019
Customer Sample Ref.	CPBP101
Depth (m)	0.30 - 0.30

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Mercury Dissolved (CVAF)	0.0000253	<0.00001	0.000253	<0.0001	-	-	-
Ammoniacal Nitrogen as N	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.000815	<0.0005	0.00815	<0.005	-	-	-
Free Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Phenol by HPLC (W)	<0.002	<0.002	<0.02	<0.02	-	-	-
Cresols by HPLC (W)	<0.006	<0.006	<0.06	<0.06	-	-	-
Xylenols by HPLC (W)	<0.008	<0.008	<0.08	<0.08	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Total Monohydric Phenols (W)	<0.016	<0.016	<0.16	<0.16	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.00409	<0.0003	0.0409	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.00123	<0.0004	0.0123	<0.004	-	-	-
Selenium	0.00212	<0.001	0.0212	<0.01	-	-	-
Vanadium	0.0421	<0.001	0.421	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.00228	<0.00001	0.0228	<0.0001	-	-	-
Acenaphthene by GCMS	0.00173	<0.000005	0.0173	<0.00005	-	-	-
Acenaphthylene by GCMS	0.000104	<0.000005	0.00104	<0.00005	-	-	-
Fluoranthene by GCMS	0.00346	<0.000005	0.0346	<0.00005	-	-	-
Anthracene by GCMS	0.00113	<0.000005	0.0113	<0.00005	-	-	-
Phenanthrene by GCMS	0.0122	<0.000005	0.122	<0.00005	-	-	-
Fluorene by GCMS	0.00183	<0.000005	0.0183	<0.00005	-	-	-
Chrysene by GCMS	0.0000968	<0.000005	0.000968	<0.00005	-	-	-
Pyrene by GCMS	0.00169	<0.000005	0.0169	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.000134	<0.000005	0.00134	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.0000177	<0.000005	0.000177	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.00000906	<0.000005	0.0000906	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.00000823	<0.000002	0.0000823	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-

Leach Test Information

Date Prepared	06-Sep-2019
pH (pH Units)	11.63
Conductivity (µS/cm)	819.00
Temperature (°C)	17.80
Volume Leachant (Litres)	0.894

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.096	**Natural Moisture Content (%)**	6.27
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	94.1
Particle Size <4mm	>95%		

Case	
SDG	190828-36
Lab Sample Number(s)	20598715
Sampled Date	20-Aug-2019
Customer Sample Ref.	CPBP101
Depth (m)	0.30 - 0.30

Eluate Analysis	**C_2** Concⁿ in 10:1 eluate (mg/l)		**A_2** 10:1 concⁿ leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
PAH Spec MS - Aqueous (W)							
PAH 16 EPA Total by GCMS	0.0247	<0.000082	0.247	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	0.034	<0.01	0.34	<0.1	-	-	-
Aromatics >EC16-EC21	0.057	<0.01	0.57	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	0.091	<0.01	0.91	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	0.094	<0.01	0.94	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	06-Sep-2019
pH (pH Units)	11.63
Conductivity (µS/cm)	819.00
Temperature (°C)	17.80
Volume Leachant (Litres)	0.894

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.099	**Natural Moisture Content (%)**	10.3
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	90.7
Particle Size <4mm	>95%		

Case	
SDG	190828-36
Lab Sample Number(s)	20598729
Sampled Date	20-Aug-2019
Customer Sample Ref.	CPBP101
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Ammoniacal Nitrogen as N	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	<0.0005	<0.0005	<0.005	<0.005	-	-	-
Free Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Phenol by HPLC (W)	<0.002	<0.002	<0.02	<0.02	-	-	-
Cresols by HPLC (W)	<0.006	<0.006	<0.06	<0.06	-	-	-
Xylenols by HPLC (W)	<0.008	<0.008	<0.08	<0.08	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Total Monohydric Phenols (W)	<0.016	<0.016	<0.16	<0.16	-	-	-
Chromium	0.00134	<0.001	0.0134	<0.01	-	-	-
Copper	0.00192	<0.0003	0.0192	<0.003	-	-	-
Lead	0.00111	<0.0002	0.0111	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.00052	<0.0004	0.0052	<0.004	-	-	-
Selenium	0.00169	<0.001	0.0169	<0.01	-	-	-
Vanadium	0.00381	<0.001	0.0381	<0.01	-	-	-
Zinc	0.00164	<0.001	0.0164	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0142	<0.00001	0.142	<0.0001	-	-	-
Acenaphthene by GCMS	0.00337	<0.000005	0.0337	<0.00005	-	-	-
Acenaphthylene by GCMS	0.000254	<0.000005	0.00254	<0.00005	-	-	-
Fluoranthene by GCMS	0.00538	<0.000005	0.0538	<0.00005	-	-	-
Anthracene by GCMS	0.00287	<0.000005	0.0287	<0.00005	-	-	-
Phenanthrene by GCMS	0.0193	<0.000005	0.193	<0.00005	-	-	-
Fluorene by GCMS	0.00381	<0.000005	0.0381	<0.00005	-	-	-
Chrysene by GCMS	0.000192	<0.000005	0.00192	<0.00005	-	-	-
Pyrene by GCMS	0.00279	<0.000005	0.0279	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.000163	<0.000005	0.00163	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.0000231	<0.000005	0.000231	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.0000105	<0.000005	0.000105	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.0000156	<0.000002	0.000156	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	0.00000693	<0.000005	0.0000693	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-

Leach Test Information

Date Prepared	06-Sep-2019
pH (pH Units)	11.52
Conductivity (µS/cm)	1,490.00
Temperature (°C)	19.70
Volume Leachant (Litres)	0.891

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.099	**Natural Moisture Content (%)**	10.3
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	90.7
Particle Size <4mm	>95%		

Case	
SDG	190828-36
Lab Sample Number(s)	20598729
Sampled Date	20-Aug-2019
Customer Sample Ref.	CPBP101
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
PAH Spec MS - Aqueous (W)							
PAH 16 EPA Total by GCMS	0.0525	<0.000082	0.525	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	0.382	<0.05	3.82	<0.5	-	-	-
Aliphatics C5-C6	0.028	<0.01	0.28	<0.1	-	-	-
Aliphatics >C6-C8	0.033	<0.01	0.33	<0.1	-	-	-
Aliphatics >C8-C10	0.037	<0.01	0.37	<0.1	-	-	-
Aliphatics >C10-C12	0.119	<0.01	1.19	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	0.044	<0.01	0.44	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	0.034	<0.01	0.34	<0.1	-	-	-
Aromatics >EC10-EC12	0.079	<0.01	0.79	<0.1	-	-	-
Aromatics >EC12-EC16	0.148	<0.01	1.48	<0.1	-	-	-
Aromatics >EC16-EC21	0.146	<0.01	1.46	<0.1	-	-	-
Aromatics >EC21-EC35	0.043	<0.01	0.43	<0.1	-	-	-
Total Aromatics >EC12-EC35	0.337	<0.01	3.37	<0.1	-	-	-
Benzene by GC	0.044	<0.007	0.44	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	0.719	<0.01	7.19	<0.1	-	-	-
Toluene by GC	0.007	<0.004	0.07	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	0.004	<0.003	0.04	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	0.051	<0.028	0.51	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	06-Sep-2019
pH (pH Units)	11.52
Conductivity (µS/cm)	1,490.00
Temperature (°C)	19.70
Volume Leachant (Litres)	0.891

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.096	**Natural Moisture Content (%)**	7.18
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	93.3
Particle Size <4mm	>95%		

Case	
SDG	190828-36
Lab Sample Number(s)	20598741
Sampled Date	20-Aug-2019
Customer Sample Ref.	CPBP101
Depth (m)	1.50 - 1.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Mercury Dissolved (CVAF)	0.0000174	<0.00001	0.000174	<0.0001	-	-	-
Ammoniacal Nitrogen as N	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	<0.0005	<0.0005	<0.005	<0.005	-	-	-
Free Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Phenol by HPLC (W)	<0.002	<0.002	<0.02	<0.02	-	-	-
Cresols by HPLC (W)	<0.006	<0.006	<0.06	<0.06	-	-	-
Xylenols by HPLC (W)	<0.008	<0.008	<0.08	<0.08	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Total Monohydric Phenols (W)	<0.016	<0.016	<0.16	<0.16	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.00275	<0.0003	0.0275	<0.003	-	-	-
Lead	0.0013	<0.0002	0.013	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.000596	<0.0004	0.00596	<0.004	-	-	-
Selenium	0.00188	<0.001	0.0188	<0.01	-	-	-
Vanadium	0.0039	<0.001	0.039	<0.01	-	-	-
Zinc	0.00203	<0.001	0.0203	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0134	<0.00001	0.134	<0.0001	-	-	-
Acenaphthene by GCMS	0.00313	<0.000005	0.0313	<0.00005	-	-	-
Acenaphthylene by GCMS	0.000242	<0.000005	0.00242	<0.00005	-	-	-
Fluoranthene by GCMS	0.00454	<0.000005	0.0454	<0.00005	-	-	-
Anthracene by GCMS	0.0024	<0.000005	0.024	<0.00005	-	-	-
Phenanthrene by GCMS	0.0164	<0.000005	0.164	<0.00005	-	-	-
Fluorene by GCMS	0.00328	<0.000005	0.0328	<0.00005	-	-	-
Chrysene by GCMS	0.000156	<0.000005	0.00156	<0.00005	-	-	-
Pyrene by GCMS	0.00241	<0.000005	0.0241	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.000184	<0.000005	0.00184	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.0000323	<0.000005	0.000323	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.0000177	<0.000005	0.000177	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.0000148	<0.000002	0.000148	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-

Leach Test Information

Date Prepared	06-Sep-2019
pH (pH Units)	11.42
Conductivity (µS/cm)	1,580.00
Temperature (°C)	19.60
Volume Leachant (Litres)	0.894

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.096	**Natural Moisture Content (%)**	7.18
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	93.3
Particle Size <4mm	>95%		

Case	
SDG	190828-36
Lab Sample Number(s)	20598741
Sampled Date	20-Aug-2019
Customer Sample Ref.	CPBP101
Depth (m)	1.50 - 1.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
PAH Spec MS - Aqueous (W)							
PAH 16 EPA Total by GCMS	0.0462	<0.000082	0.462	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	0.323	<0.05	3.23	<0.5	-	-	-
Aliphatics C5-C6	0.028	<0.01	0.28	<0.1	-	-	-
Aliphatics >C6-C8	0.031	<0.01	0.31	<0.1	-	-	-
Aliphatics >C8-C10	0.031	<0.01	0.31	<0.1	-	-	-
Aliphatics >C10-C12	0.089	<0.01	0.89	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	0.045	<0.01	0.45	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	0.033	<0.01	0.33	<0.1	-	-	-
Aromatics >EC10-EC12	0.059	<0.01	0.59	<0.1	-	-	-
Aromatics >EC12-EC16	0.157	<0.01	1.57	<0.1	-	-	-
Aromatics >EC16-EC21	0.161	<0.01	1.61	<0.1	-	-	-
Aromatics >EC21-EC35	0.044	<0.01	0.44	<0.1	-	-	-
Total Aromatics >EC12-EC35	0.362	<0.01	3.62	<0.1	-	-	-
Benzene by GC	0.045	<0.007	0.45	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	0.685	<0.01	6.85	<0.1	-	-	-
Toluene by GC	0.007	<0.004	0.07	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	0.005	<0.003	0.05	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	0.052	<0.028	0.52	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	06-Sep-2019
pH (pH Units)	11.42
Conductivity (µS/cm)	1,580.00
Temperature (°C)	19.60
Volume Leachant (Litres)	0.894

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.118	**Natural Moisture Content (%)**	31.6
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	76
Particle Size <4mm	>95%		

Case	
SDG	190828-36
Lab Sample Number(s)	20598757
Sampled Date	20-Aug-2019
Customer Sample Ref.	WSBP108
Depth (m)	2.10 - 2.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Ammoniacal Nitrogen as N	1.98	<0.01	19.8	<0.1	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00287	<0.0005	0.0287	<0.005	-	-	-
Free Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Phenol by HPLC (W)	<0.002	<0.002	<0.02	<0.02	-	-	-
Cresols by HPLC (W)	<0.006	<0.006	<0.06	<0.06	-	-	-
Xylenols by HPLC (W)	<0.008	<0.008	<0.08	<0.08	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Total Monohydric Phenols (W)	<0.016	<0.016	<0.16	<0.16	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.00218	<0.0003	0.0218	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	0.0168	<0.003	0.168	<0.03	-	-	-
Nickel	0.000842	<0.0004	0.00842	<0.004	-	-	-
Selenium	0.00139	<0.001	0.0139	<0.01	-	-	-
Vanadium	0.00167	<0.001	0.0167	<0.01	-	-	-
Zinc	0.00648	<0.001	0.0648	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.199	<0.019	1.99	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000112	<0.00001	0.000112	<0.0001	-	-	-
Acenaphthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.00012	<0.000005	0.0012	<0.00005	-	-	-
Anthracene by GCMS	0.00000865	<0.000005	0.0000865	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000886	<0.000005	0.000886	<0.00005	-	-	-
Fluorene by GCMS	0.00000527	<0.000005	0.0000527	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.0000737	<0.000005	0.000737	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-

Leach Test Information

Date Prepared	06-Sep-2019
pH (pH Units)	8.52
Conductivity (µS/cm)	171.00
Temperature (°C)	19.40
Volume Leachant (Litres)	0.872

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.118	**Natural Moisture Content (%)**	31.6
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	76
Particle Size <4mm	>95%		

Case	
SDG	190828-36
Lab Sample Number(s)	20598757
Sampled Date	20-Aug-2019
Customer Sample Ref.	WSBP108
Depth (m)	2.10 - 2.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
PAH Spec MS - Aqueous (W)							
PAH 16 EPA Total by GCMS	0.000307	<0.000082	0.00307	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	0.011	<0.01	0.11	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	0.006	<0.005	0.06	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	06-Sep-2019
pH (pH Units)	8.52
Conductivity (µS/cm)	171.00
Temperature (°C)	19.40
Volume Leachant (Litres)	0.872

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.106	**Natural Moisture Content (%)**	17.6
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	85
Particle Size <4mm	>95%		

Case	
SDG	190828-36
Lab Sample Number(s)	20598767
Sampled Date	21-Aug-2019
Customer Sample Ref.	WSBP109
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Ammoniacal Nitrogen as N	0.709	<0.01	7.09	<0.1	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00264	<0.0005	0.0264	<0.005	-	-	-
Free Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Phenol by HPLC (W)	<0.002	<0.002	<0.02	<0.02	-	-	-
Cresols by HPLC (W)	<0.006	<0.006	<0.06	<0.06	-	-	-
Xylenols by HPLC (W)	0.01	<0.008	0.1	<0.08	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Total Monohydric Phenols (W)	<0.016	<0.016	<0.16	<0.16	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	<0.0003	<0.0003	<0.003	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	0.567	<0.003	5.67	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	<0.001	<0.001	<0.01	<0.01	-	-	-
Vanadium	0.0024	<0.001	0.024	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000177	<0.00001	0.000177	<0.0001	-	-	-
Acenaphthene by GCMS	0.000425	<0.000005	0.00425	<0.00005	-	-	-
Acenaphthylene by GCMS	0.0000128	<0.000005	0.000128	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000168	<0.000005	0.000168	<0.00005	-	-	-
Anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000183	<0.000005	0.000183	<0.00005	-	-	-
Fluorene by GCMS	0.0000688	<0.000005	0.000688	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.0000146	<0.000005	0.000146	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-

Leach Test Information

Date Prepared	05-Sep-2019
pH (pH Units)	7.68
Conductivity (µS/cm)	131.00
Temperature (°C)	19.50
Volume Leachant (Litres)	0.884

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.106	**Natural Moisture Content (%)**	17.6
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	85
Particle Size <4mm	>95%		

Case	
SDG	190828-36
Lab Sample Number(s)	20598767
Sampled Date	21-Aug-2019
Customer Sample Ref.	WSBP109
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
PAH Spec MS - Aqueous (W)							
PAH 16 EPA Total by GCMS	0.000574	<0.000082	0.00574	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	1.84	<0.05	18.4	<0.5	-	-	-
Aliphatics C5-C6	0.012	<0.01	0.12	<0.1	-	-	-
Aliphatics >C6-C8	0.045	<0.01	0.45	<0.1	-	-	-
Aliphatics >C8-C10	0.107	<0.01	1.07	<0.1	-	-	-
Aliphatics >C10-C12	0.901	<0.01	9.01	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	0.03	<0.01	0.3	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	0.141	<0.01	1.41	<0.1	-	-	-
Aromatics >EC10-EC12	0.601	<0.01	6.01	<0.1	-	-	-
Aromatics >EC12-EC16	0.053	<0.01	0.53	<0.1	-	-	-
Aromatics >EC16-EC21	0.071	<0.01	0.71	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	0.124	<0.01	1.24	<0.1	-	-	-
Benzene by GC	0.03	<0.007	0.3	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	1.97	<0.01	19.7	<0.1	-	-	-
Toluene by GC	0.006	<0.004	0.06	<0.04	-	-	-
Ethylbenzene by GC	0.011	<0.005	0.11	<0.05	-	-	-
m & p Xylene by GC	0.052	<0.008	0.52	<0.08	-	-	-
o Xylene by GC	0.006	<0.003	0.06	<0.03	-	-	-
Sum m&p and o Xylene by GC	0.058	<0.011	0.58	<0.11	-	-	-
Sum of BTEX by GC	0.105	<0.028	1.05	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	05-Sep-2019
pH (pH Units)	7.68
Conductivity (µS/cm)	131.00
Temperature (°C)	19.50
Volume Leachant (Litres)	0.884

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.450	**Natural Moisture Content (%)**	400
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	20
Particle Size <4mm	>95%		

Case	
SDG	190828-36
Lab Sample Number(s)	20598778
Sampled Date	20-Aug-2019
Customer Sample Ref.	WSBP108
Depth (m)	3.40 - 4.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Ammoniacal Nitrogen as N	1.99	<0.01	19.9	<0.1	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00739	<0.0005	0.0739	<0.005	-	-	-
Free Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Phenol by HPLC (W)	<0.002	<0.002	<0.02	<0.02	-	-	-
Cresols by HPLC (W)	<0.006	<0.006	<0.06	<0.06	-	-	-
Xylenols by HPLC (W)	<0.008	<0.008	<0.08	<0.08	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Total Monohydric Phenols (W)	<0.016	<0.016	<0.16	<0.16	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.00357	<0.0003	0.0357	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	0.246	<0.003	2.46	<0.03	-	-	-
Nickel	0.00103	<0.0004	0.0103	<0.004	-	-	-
Selenium	<0.001	<0.001	<0.01	<0.01	-	-	-
Vanadium	<0.001	<0.001	<0.01	<0.01	-	-	-
Zinc	0.012	<0.001	0.12	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000203	<0.00001	0.000203	<0.0001	-	-	-
Acenaphthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.000068	<0.000005	0.00068	<0.00005	-	-	-
Anthracene by GCMS	0.00000611	<0.000005	0.0000611	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000314	<0.000005	0.000314	<0.00005	-	-	-
Fluorene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.000035	<0.000005	0.00035	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-

Leach Test Information

Date Prepared	05-Sep-2019
pH (pH Units)	7.64
Conductivity (µS/cm)	642.00
Temperature (°C)	19.50
Volume Leachant (Litres)	0.540

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.450	**Natural Moisture Content (%)**	400
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	20
Particle Size <4mm	>95%		

Case	
SDG	190828-36
Lab Sample Number(s)	20598778
Sampled Date	20-Aug-2019
Customer Sample Ref.	WSBP108
Depth (m)	3.40 - 4.00

Eluate Analysis	**C_2** Concⁿ in 10:1 eluate (mg/l)		**A_2** 10:1 concⁿ leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
PAH Spec MS - Aqueous (W)							
PAH 16 EPA Total by GCMS	0.000161	<0.000082	0.00161	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	05-Sep-2019
pH (pH Units)	7.64
Conductivity (µS/cm)	642.00
Temperature (°C)	19.50
Volume Leachant (Litres)	0.540

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.209	**Natural Moisture Content (%)**	133
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	43
Particle Size <4mm	>95%		

Case	
SDG	190828-36
Lab Sample Number(s)	20598788
Sampled Date	20-Aug-2019
Customer Sample Ref.	CPB11
Depth (m)	3.50 - 3.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Ammoniacal Nitrogen as N	4.85	<0.01	48.5	<0.1	-	-	-
Total Cyanide (W)	0.07	<0.05	0.7	<0.5	-	-	-
Arsenic	0.00398	<0.0005	0.0398	<0.005	-	-	-
Free Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Phenol by HPLC (W)	<0.002	<0.002	<0.02	<0.02	-	-	-
Cresols by HPLC (W)	<0.006	<0.006	<0.06	<0.06	-	-	-
Xylenols by HPLC (W)	<0.008	<0.008	<0.08	<0.08	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Total Monohydric Phenols (W)	<0.016	<0.016	<0.16	<0.16	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.00228	<0.0003	0.0228	<0.003	-	-	-
Lead	0.000708	<0.0002	0.00708	<0.002	-	-	-
Manganese	0.0299	<0.003	0.299	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	0.0151	<0.001	0.151	<0.01	-	-	-
Vanadium	0.0079	<0.001	0.079	<0.01	-	-	-
Zinc	0.044	<0.001	0.44	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.268	<0.019	2.68	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000586	<0.00001	0.000586	<0.0001	-	-	-
Acenaphthene by GCMS	0.00000597	<0.000005	0.0000597	<0.00005	-	-	-
Acenaphthylene by GCMS	0.0000497	<0.000005	0.000497	<0.00005	-	-	-
Fluoranthene by GCMS	0.000276	<0.000005	0.00276	<0.00005	-	-	-
Anthracene by GCMS	0.0000221	<0.000005	0.000221	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000983	<0.000005	0.000983	<0.00005	-	-	-
Fluorene by GCMS	0.0000261	<0.000005	0.000261	<0.00005	-	-	-
Chrysene by GCMS	0.0000749	<0.000005	0.000749	<0.00005	-	-	-
Pyrene by GCMS	0.000207	<0.000005	0.00207	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.0000995	<0.000005	0.000995	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.000363	<0.000005	0.00363	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.000116	<0.000005	0.00116	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.000213	<0.000002	0.00213	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	0.0000454	<0.000005	0.000454	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	0.000161	<0.000005	0.00161	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	0.00014	<0.000005	0.0014	<0.00005	-	-	-

Leach Test Information

Date Prepared	05-Sep-2019
pH (pH Units)	8.28
Conductivity (µS/cm)	695.00
Temperature (°C)	19.70
Volume Leachant (Litres)	0.780

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.209	**Natural Moisture Content (%)**	133
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	43
Particle Size <4mm	>95%		

Case	
SDG	190828-36
Lab Sample Number(s)	20598788
Sampled Date	20-Aug-2019
Customer Sample Ref.	CPB11
Depth (m)	3.50 - 3.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
PAH Spec MS - Aqueous (W)							
PAH 16 EPA Total by GCMS	0.00196	<0.000082	0.0196	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	05-Sep-2019
pH (pH Units)	8.28
Conductivity (µS/cm)	695.00
Temperature (°C)	19.70
Volume Leachant (Litres)	0.780

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.137	**Natural Moisture Content (%)**	51.5
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	66
Particle Size <4mm	>95%		

Case	
SDG	190828-36
Lab Sample Number(s)	20598798
Sampled Date	20-Aug-2019
Customer Sample Ref.	CPB11
Depth (m)	5.50 - 5.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Ammoniacal Nitrogen as N	1.46	<0.01	14.6	<0.1	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00285	<0.0005	0.0285	<0.005	-	-	-
Free Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Phenol by HPLC (W)	<0.002	<0.002	<0.02	<0.02	-	-	-
Cresols by HPLC (W)	<0.006	<0.006	<0.06	<0.06	-	-	-
Xylenols by HPLC (W)	<0.008	<0.008	<0.08	<0.08	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Total Monohydric Phenols (W)	<0.016	<0.016	<0.16	<0.16	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.00152	<0.0003	0.0152	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.00106	<0.0004	0.0106	<0.004	-	-	-
Selenium	0.00108	<0.001	0.0108	<0.01	-	-	-
Vanadium	0.00326	<0.001	0.0326	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Acenaphthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000379	<0.000005	0.000379	<0.00005	-	-	-
Anthracene by GCMS	0.00000832	<0.000005	0.0000832	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000108	<0.000005	0.000108	<0.00005	-	-	-
Fluorene by GCMS	0.0000143	<0.000005	0.000143	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.0000244	<0.000005	0.000244	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-

Leach Test Information

Date Prepared	06-Sep-2019
pH (pH Units)	8.55
Conductivity (µS/cm)	302.00
Temperature (°C)	19.30
Volume Leachant (Litres)	0.854

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.137	**Natural Moisture Content (%)**	51.5
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	66
Particle Size <4mm	>95%		

Case	
SDG	190828-36
Lab Sample Number(s)	20598798
Sampled Date	20-Aug-2019
Customer Sample Ref.	CPB11
Depth (m)	5.50 - 5.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
PAH Spec MS - Aqueous (W)							
PAH 16 EPA Total by GCMS	0.0000957	<0.000082	0.000957	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	06-Sep-2019
pH (pH Units)	8.55
Conductivity (µS/cm)	302.00
Temperature (°C)	19.30
Volume Leachant (Litres)	0.854

Mcerts Certification does not apply to leachates

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Validated

CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.096	**Natural Moisture Content (%)**	6.61
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	93.8
Particle Size <4mm	>95%		

Case	
SDG	190828-36
Lab Sample Number(s)	20598808
Sampled Date	20-Aug-2019
Customer Sample Ref.	CPB11
Depth (m)	9.50 - 9.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Ammoniacal Nitrogen as N	0.0781	<0.01	0.781	<0.1	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00246	<0.0005	0.0246	<0.005	-	-	-
Free Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Phenol by HPLC (W)	<0.002	<0.002	<0.02	<0.02	-	-	-
Cresols by HPLC (W)	<0.006	<0.006	<0.06	<0.06	-	-	-
Xylenols by HPLC (W)	<0.008	<0.008	<0.08	<0.08	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Total Monohydric Phenols (W)	<0.016	<0.016	<0.16	<0.16	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.0013	<0.0003	0.013	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	0.0326	<0.003	0.326	<0.03	-	-	-
Nickel	0.00105	<0.0004	0.0105	<0.004	-	-	-
Selenium	0.00123	<0.001	0.0123	<0.01	-	-	-
Vanadium	0.00206	<0.001	0.0206	<0.01	-	-	-
Zinc	0.013	<0.001	0.13	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Acenaphthene by GCMS	0.000132	<0.000005	0.00132	<0.00005	-	-	-
Acenaphthylene by GCMS	0.0000302	<0.000005	0.000302	<0.00005	-	-	-
Fluoranthene by GCMS	0.000764	<0.000005	0.00764	<0.00005	-	-	-
Anthracene by GCMS	0.0000169	<0.000005	0.000169	<0.00005	-	-	-
Phenanthrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluorene by GCMS	0.0000458	<0.000005	0.000458	<0.00005	-	-	-
Chrysene by GCMS	0.0000289	<0.000005	0.000289	<0.00005	-	-	-
Pyrene by GCMS	0.000551	<0.000005	0.00551	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.000029	<0.000005	0.00029	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.0000189	<0.000005	0.000189	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.00000987	<0.000005	0.0000987	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.0000099	<0.000002	0.000099	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-

Leach Test Information

Date Prepared	05-Sep-2019
pH (pH Units)	8.01
Conductivity (µS/cm)	181.00
Temperature (°C)	19.60
Volume Leachant (Litres)	0.894

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.096	**Natural Moisture Content (%)**	6.61
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	93.8
Particle Size <4mm	>95%		

Case	
SDG	190828-36
Lab Sample Number(s)	20598808
Sampled Date	20-Aug-2019
Customer Sample Ref.	CPB11
Depth (m)	9.50 - 9.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
PAH Spec MS - Aqueous (W)							
PAH 16 EPA Total by GCMS	0.00164	<0.000082	0.0164	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	05-Sep-2019
pH (pH Units)	8.01
Conductivity (µS/cm)	181.00
Temperature (°C)	19.60
Volume Leachant (Litres)	0.894

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.125	**Natural Moisture Content (%)**	39
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	72
Particle Size <4mm	>95%		

Case	
SDG	190828-36
Lab Sample Number(s)	20598817
Sampled Date	20-Aug-2019
Customer Sample Ref.	CPBR3
Depth (m)	9.10 - 9.10

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Ammoniacal Nitrogen as N	1.16	<0.01	11.6	<0.1	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00268	<0.0005	0.0268	<0.005	-	-	-
Free Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Phenol by HPLC (W)	<0.002	<0.002	<0.02	<0.02	-	-	-
Cresols by HPLC (W)	<0.006	<0.006	<0.06	<0.06	-	-	-
Xylenols by HPLC (W)	<0.008	<0.008	<0.08	<0.08	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Total Monohydric Phenols (W)	<0.016	<0.016	<0.16	<0.16	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.00103	<0.0003	0.0103	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	0.0183	<0.003	0.183	<0.03	-	-	-
Nickel	0.000557	<0.0004	0.00557	<0.004	-	-	-
Selenium	<0.001	<0.001	<0.01	<0.01	-	-	-
Vanadium	0.00612	<0.001	0.0612	<0.01	-	-	-
Zinc	0.00164	<0.001	0.0164	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000101	<0.00001	0.000101	<0.0001	-	-	-
Acenaphthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000305	<0.000005	0.000305	<0.00005	-	-	-
Anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000209	<0.000005	0.000209	<0.00005	-	-	-
Fluorene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.0000194	<0.000005	0.000194	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-

Leach Test Information

Date Prepared	06-Sep-2019
pH (pH Units)	8.70
Conductivity (µS/cm)	156.00
Temperature (°C)	19.40
Volume Leachant (Litres)	0.865

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.125	**Natural Moisture Content (%)**	39
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	72
Particle Size <4mm	>95%		

Case	
SDG	190828-36
Lab Sample Number(s)	20598817
Sampled Date	20-Aug-2019
Customer Sample Ref.	CPBR3
Depth (m)	9.10 - 9.10

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
PAH Spec MS - Aqueous (W)							
PAH 16 EPA Total by GCMS	<0.000082	<0.000082	<0.00082	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	06-Sep-2019
pH (pH Units)	8.70
Conductivity (µS/cm)	156.00
Temperature (°C)	19.40
Volume Leachant (Litres)	0.865

Mcerts Certification does not apply to leachates

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Validated

CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.166	**Natural Moisture Content (%)**	85.2
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	54
Particle Size <4mm	>95%		

Case	
SDG	190828-36
Lab Sample Number(s)	20598824
Sampled Date	21-Aug-2019
Customer Sample Ref.	CPB7
Depth (m)	2.70 - 2.70

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Mercury Dissolved (CVAF)	0.0000165	<0.00001	0.000165	<0.0001	-	-	-
Ammoniacal Nitrogen as N	14.8	<0.01	148	<0.1	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.0181	<0.0005	0.181	<0.005	-	-	-
Free Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Phenol by HPLC (W)	<0.002	<0.002	<0.02	<0.02	-	-	-
Cresols by HPLC (W)	<0.006	<0.006	<0.06	<0.06	-	-	-
Xylenols by HPLC (W)	<0.008	<0.008	<0.08	<0.08	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Total Monohydric Phenols (W)	<0.016	<0.016	<0.16	<0.16	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.00702	<0.0003	0.0702	<0.003	-	-	-
Lead	0.00239	<0.0002	0.0239	<0.002	-	-	-
Manganese	0.0467	<0.003	0.467	<0.03	-	-	-
Nickel	0.00309	<0.0004	0.0309	<0.004	-	-	-
Selenium	0.00288	<0.001	0.0288	<0.01	-	-	-
Vanadium	0.0211	<0.001	0.211	<0.01	-	-	-
Zinc	0.0313	<0.001	0.313	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.216	<0.019	2.16	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000114	<0.00001	0.000114	<0.0001	-	-	-
Acenaphthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Acenaphthylene by GCMS	0.0000114	<0.000005	0.000114	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000621	<0.000005	0.000621	<0.00005	-	-	-
Anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Phenanthrene by GCMS	0.00003	<0.000005	0.0003	<0.00005	-	-	-
Fluorene by GCMS	0.0000075	<0.000005	0.000075	<0.00005	-	-	-
Chrysene by GCMS	0.0000119	<0.000005	0.000119	<0.00005	-	-	-
Pyrene by GCMS	0.0000488	<0.000005	0.000488	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.0000112	<0.000005	0.000112	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.0000202	<0.000005	0.000202	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.0000131	<0.000005	0.000131	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.0000106	<0.000002	0.000106	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-

Leach Test Information

Date Prepared	06-Sep-2019
pH (pH Units)	8.96
Conductivity (µS/cm)	1,400.00
Temperature (°C)	19.50
Volume Leachant (Litres)	0.823

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.166	**Natural Moisture Content (%)**	85.2
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	54
Particle Size <4mm	>95%		

Case	
SDG	190828-36
Lab Sample Number(s)	20598824
Sampled Date	21-Aug-2019
Customer Sample Ref.	CPB7
Depth (m)	2.70 - 2.70

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
PAH Spec MS - Aqueous (W)							
PAH 16 EPA Total by GCMS	0.000238	<0.000082	0.00238	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	06-Sep-2019
pH (pH Units)	8.96
Conductivity (µS/cm)	1,400.00
Temperature (°C)	19.50
Volume Leachant (Litres)	0.823

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.132	**Natural Moisture Content (%)**	47.1
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	68
Particle Size <4mm	>95%		

Case	
SDG	190828-36
Lab Sample Number(s)	20598832
Sampled Date	21-Aug-2019
Customer Sample Ref.	CPB7
Depth (m)	4.70 - 4.70

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Ammoniacal Nitrogen as N	15.8	<0.01	158	<0.1	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.0242	<0.0005	0.242	<0.005	-	-	-
Free Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Phenol by HPLC (W)	<0.002	<0.002	<0.02	<0.02	-	-	-
Cresols by HPLC (W)	<0.006	<0.006	<0.06	<0.06	-	-	-
Xylenols by HPLC (W)	<0.008	<0.008	<0.08	<0.08	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Total Monohydric Phenols (W)	<0.016	<0.016	<0.16	<0.16	-	-	-
Chromium	0.0023	<0.001	0.023	<0.01	-	-	-
Copper	0.0087	<0.0003	0.087	<0.003	-	-	-
Lead	0.000949	<0.0002	0.00949	<0.002	-	-	-
Manganese	0.0425	<0.003	0.425	<0.03	-	-	-
Nickel	0.0115	<0.0004	0.115	<0.004	-	-	-
Selenium	0.002	<0.001	0.02	<0.01	-	-	-
Vanadium	0.0821	<0.001	0.821	<0.01	-	-	-
Zinc	0.0307	<0.001	0.307	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.0564	<0.019	0.564	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Acenaphthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000233	<0.000005	0.000233	<0.00005	-	-	-
Anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Phenanthrene by GCMS	0.000014	<0.000005	0.00014	<0.00005	-	-	-
Fluorene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.0000164	<0.000005	0.000164	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.00000838	<0.000005	0.0000838	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.00000321	<0.000002	0.0000321	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-

Leach Test Information

Date Prepared	06-Sep-2019
pH (pH Units)	8.27
Conductivity (µS/cm)	573.00
Temperature (°C)	19.50
Volume Leachant (Litres)	0.858

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.132	**Natural Moisture Content (%)**	47.1
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	68
Particle Size <4mm	>95%		

Case	
SDG	190828-36
Lab Sample Number(s)	20598832
Sampled Date	21-Aug-2019
Customer Sample Ref.	CPB7
Depth (m)	4.70 - 4.70

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
PAH Spec MS - Aqueous (W)							
PAH 16 EPA Total by GCMS	<0.000082	<0.000082	<0.00082	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	06-Sep-2019
pH (pH Units)	8.27
Conductivity (µS/cm)	573.00
Temperature (°C)	19.50
Volume Leachant (Litres)	0.858

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.231	**Natural Moisture Content (%)**	156
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	39
Particle Size <4mm	>95%		

Case	
SDG	190828-36
Lab Sample Number(s)	20598839
Sampled Date	21-Aug-2019
Customer Sample Ref.	CPB7
Depth (m)	6.60 - 6.60

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Ammoniacal Nitrogen as N	21.5	<0.01	215	<0.1	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.0325	<0.003	0.325	<0.03	-	-	-
Free Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Phenol by HPLC (W)	<0.002	<0.002	<0.02	<0.02	-	-	-
Cresols by HPLC (W)	<0.006	<0.006	<0.06	<0.06	-	-	-
Xylenols by HPLC (W)	0.02	<0.008	0.2	<0.08	-	-	-
Cadmium	<0.00048	<0.00048	<0.0048	<0.0048	-	-	-
Total Monohydric Phenols (W)	0.02	<0.016	0.2	<0.16	-	-	-
Chromium	<0.006	<0.006	<0.06	<0.06	-	-	-
Copper	0.00566	<0.0018	0.0566	<0.018	-	-	-
Lead	0.00177	<0.0012	0.0177	<0.012	-	-	-
Manganese	0.0992	<0.018	0.992	<0.18	-	-	-
Nickel	0.00254	<0.0004	0.0254	<0.004	-	-	-
Selenium	<0.006	<0.006	<0.06	<0.06	-	-	-
Vanadium	<0.006	<0.006	<0.06	<0.06	-	-	-
Zinc	0.0146	<0.006	0.146	<0.06	-	-	-
Iron (Dis.Filt) mg/l	0.107	<0.019	1.07	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000107	<0.00001	0.000107	<0.0001	-	-	-
Acenaphthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Acenaphthylene by GCMS	0.00000796	<0.000005	0.0000796	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000429	<0.000005	0.000429	<0.00005	-	-	-
Anthracene by GCMS	0.00000769	<0.000005	0.0000769	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000241	<0.000005	0.000241	<0.00005	-	-	-
Fluorene by GCMS	0.00000877	<0.000005	0.0000877	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.0000352	<0.000005	0.000352	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.00000798	<0.000005	0.0000798	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-

Leach Test Information

Date Prepared	05-Sep-2019
pH (pH Units)	8.36
Conductivity (µS/cm)	1,670.00
Temperature (°C)	19.60
Volume Leachant (Litres)	0.760

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.231	**Natural Moisture Content (%)**	156
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	39
Particle Size <4mm	>95%		

Case	
SDG	190828-36
Lab Sample Number(s)	20598839
Sampled Date	21-Aug-2019
Customer Sample Ref.	CPB7
Depth (m)	6.60 - 6.60

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
PAH Spec MS - Aqueous (W)							
PAH 16 EPA Total by GCMS	0.000145	<0.000082	0.00145	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	0.011	<0.01	0.11	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	0.013	<0.01	0.13	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	0.009	<0.008	0.09	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	05-Sep-2019
pH (pH Units)	8.36
Conductivity (µS/cm)	1,670.00
Temperature (°C)	19.60
Volume Leachant (Litres)	0.760

Mcerts Certification does not apply to leachates

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Validated

CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.136	**Natural Moisture Content (%)**	51.5
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	66
Particle Size <4mm	>95%		

Case	
SDG	190828-36
Lab Sample Number(s)	20598847
Sampled Date	19-Aug-2019
Customer Sample Ref.	CPB9
Depth (m)	3.50 - 3.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Ammoniacal Nitrogen as N	3.93	<0.01	39.3	<0.1	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00178	<0.0005	0.0178	<0.005	-	-	-
Free Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Phenol by HPLC (W)	<0.002	<0.002	<0.02	<0.02	-	-	-
Cresols by HPLC (W)	<0.006	<0.006	<0.06	<0.06	-	-	-
Xylenols by HPLC (W)	<0.008	<0.008	<0.08	<0.08	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Total Monohydric Phenols (W)	<0.016	<0.016	<0.16	<0.16	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.00808	<0.0003	0.0808	<0.003	-	-	-
Lead	0.00094	<0.0002	0.0094	<0.002	-	-	-
Manganese	0.0331	<0.003	0.331	<0.03	-	-	-
Nickel	0.00146	<0.0004	0.0146	<0.004	-	-	-
Selenium	0.00266	<0.001	0.0266	<0.01	-	-	-
Vanadium	0.00438	<0.001	0.0438	<0.01	-	-	-
Zinc	0.0548	<0.001	0.548	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.135	<0.019	1.35	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Acenaphthene by GCMS	0.0000329	<0.000025	0.000329	<0.00025	-	-	-
Acenaphthylene by GCMS	0.0000329	<0.000025	0.000329	<0.00025	-	-	-
Fluoranthene by GCMS	0.000748	<0.000025	0.00748	<0.00025	-	-	-
Anthracene by GCMS	<0.000025	<0.000025	<0.00025	<0.00025	-	-	-
Phenanthrene by GCMS	<0.000025	<0.000025	<0.00025	<0.00025	-	-	-
Fluorene by GCMS	<0.000025	<0.000025	<0.00025	<0.00025	-	-	-
Chrysene by GCMS	0.0000837	<0.000025	0.000837	<0.00025	-	-	-
Pyrene by GCMS	0.000444	<0.000025	0.00444	<0.00025	-	-	-
Benz(a)anthracene by GCMS	<0.000025	<0.000025	<0.00025	<0.00025	-	-	-
Benzo(b)fluoranthene by GCMS	0.000182	<0.000025	0.00182	<0.00025	-	-	-
Benzo(k)fluoranthene by GCMS	0.0000861	<0.000025	0.000861	<0.00025	-	-	-
Benzo(a)pyrene by GCMS	0.000118	<0.00001	0.00118	<0.0001	-	-	-
Dibenzo(ah)anthracene by GCMS	0.0000263	<0.000025	0.000263	<0.00025	-	-	-
Benzo(ghi)perylene by GCMS	<0.000025	<0.000025	<0.00025	<0.00025	-	-	-
Indeno(123cd)pyrene by GCMS	0.0000827	<0.000025	0.000827	<0.00025	-	-	-

Leach Test Information

Date Prepared	06-Sep-2019
pH (pH Units)	7.97
Conductivity (µS/cm)	473.00
Temperature (°C)	22.10
Volume Leachant (Litres)	0.854

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.136	**Natural Moisture Content (%)**	51.5
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	66
Particle Size <4mm	>95%		

Case	
SDG	190828-36
Lab Sample Number(s)	20598847
Sampled Date	19-Aug-2019
Customer Sample Ref.	CPB9
Depth (m)	3.50 - 3.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
PAH Spec MS - Aqueous (W)							
PAH 16 EPA Total by GCMS	0.00184	<0.00041	0.0184	<0.0041	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	06-Sep-2019
pH (pH Units)	7.97
Conductivity (µS/cm)	473.00
Temperature (°C)	22.10
Volume Leachant (Litres)	0.854

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.243	**Natural Moisture Content (%)**	170
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	37
Particle Size <4mm	>95%		

Case	
SDG	190828-36
Lab Sample Number(s)	20598859
Sampled Date	19-Aug-2019
Customer Sample Ref.	CPB9
Depth (m)	6.50 - 6.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Ammoniacal Nitrogen as N	3.31	<0.01	33.1	<0.1	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.0034	<0.0005	0.034	<0.005	-	-	-
Free Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Phenol by HPLC (W)	<0.002	<0.002	<0.02	<0.02	-	-	-
Cresols by HPLC (W)	<0.006	<0.006	<0.06	<0.06	-	-	-
Xylenols by HPLC (W)	<0.008	<0.008	<0.08	<0.08	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Total Monohydric Phenols (W)	<0.016	<0.016	<0.16	<0.16	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	<0.0003	<0.0003	<0.003	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	0.127	<0.003	1.27	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	<0.001	<0.001	<0.01	<0.01	-	-	-
Vanadium	<0.001	<0.001	<0.01	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000611	<0.00001	0.000611	<0.0001	-	-	-
Acenaphthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.000278	<0.000005	0.00278	<0.00005	-	-	-
Anthracene by GCMS	0.0000452	<0.000005	0.000452	<0.00005	-	-	-
Phenanthrene by GCMS	0.000402	<0.000005	0.00402	<0.00005	-	-	-
Fluorene by GCMS	0.0000354	<0.000005	0.000354	<0.00005	-	-	-
Chrysene by GCMS	0.0000695	<0.000005	0.000695	<0.00005	-	-	-
Pyrene by GCMS	0.000194	<0.000005	0.00194	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.0000764	<0.000005	0.000764	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.000101	<0.000005	0.00101	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.0000756	<0.000005	0.000756	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.0000689	<0.000002	0.000689	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-

Leach Test Information

Date Prepared	05-Sep-2019
pH (pH Units)	7.33
Conductivity (µS/cm)	490.00
Temperature (°C)	19.40
Volume Leachant (Litres)	0.747

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.243	**Natural Moisture Content (%)**	170
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	37
Particle Size <4mm	>95%		

Case	
SDG	190828-36
Lab Sample Number(s)	20598859
Sampled Date	19-Aug-2019
Customer Sample Ref.	CPB9
Depth (m)	6.50 - 6.50

Eluate Analysis	**C_2** Concⁿ in 10:1 eluate (mg/l)		**A_2** 10:1 concⁿ leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
PAH Spec MS - Aqueous (W)							
PAH 16 EPA Total by GCMS	0.00141	<0.000082	0.0141	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	0.185	<0.01	1.85	<0.1	-	-	-
Total Aromatics >EC12-EC35	0.185	<0.01	1.85	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	0.185	<0.01	1.85	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	05-Sep-2019
pH (pH Units)	7.33
Conductivity (µS/cm)	490.00
Temperature (°C)	19.40
Volume Leachant (Litres)	0.747

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.134	**Natural Moisture Content (%)**	49.3
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	67
Particle Size <4mm	>95%		

Case	
SDG	190828-36
Lab Sample Number(s)	20598882
Sampled Date	19-Aug-2019
Customer Sample Ref.	CPB9
Depth (m)	7.60 - 7.60

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Ammoniacal Nitrogen as N	2.38	<0.01	23.8	<0.1	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00192	<0.0005	0.0192	<0.005	-	-	-
Free Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Phenol by HPLC (W)	<0.002	<0.002	<0.02	<0.02	-	-	-
Cresols by HPLC (W)	<0.006	<0.006	<0.06	<0.06	-	-	-
Xylenols by HPLC (W)	<0.008	<0.008	<0.08	<0.08	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Total Monohydric Phenols (W)	<0.016	<0.016	<0.16	<0.16	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.0014	<0.0003	0.014	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	0.0533	<0.003	0.533	<0.03	-	-	-
Nickel	0.00111	<0.0004	0.0111	<0.004	-	-	-
Selenium	0.00116	<0.001	0.0116	<0.01	-	-	-
Vanadium	0.00431	<0.001	0.0431	<0.01	-	-	-
Zinc	0.00108	<0.001	0.0108	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Acenaphthene by GCMS	0.0000337	<0.000005	0.000337	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.000214	<0.000005	0.00214	<0.00005	-	-	-
Anthracene by GCMS	0.0000158	<0.000005	0.000158	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000101	<0.000005	0.000101	<0.00005	-	-	-
Fluorene by GCMS	0.00000888	<0.000005	0.0000888	<0.00005	-	-	-
Chrysene by GCMS	0.0000174	<0.000005	0.000174	<0.00005	-	-	-
Pyrene by GCMS	0.000114	<0.000005	0.00114	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.0000177	<0.000005	0.000177	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.0000204	<0.000005	0.000204	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.00000818	<0.000005	0.0000818	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.0000124	<0.000002	0.000124	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	0.00000647	<0.000005	0.0000647	<0.00005	-	-	-

Leach Test Information

Date Prepared	07-Sep-2019
pH (pH Units)	7.75
Conductivity (µS/cm)	354.00
Temperature (°C)	22.10
Volume Leachant (Litres)	0.856

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.134	**Natural Moisture Content (%)**	49.3
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	67
Particle Size <4mm	>95%		

Case	
SDG	190828-36
Lab Sample Number(s)	20598882
Sampled Date	19-Aug-2019
Customer Sample Ref.	CPB9
Depth (m)	7.60 - 7.60

Eluate Analysis	**C_2** Concⁿ in 10:1 eluate (mg/l)		**A_2** 10:1 concⁿ leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
PAH Spec MS - Aqueous (W)							
PAH 16 EPA Total by GCMS	0.000479	<0.000082	0.00479	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	07-Sep-2019
pH (pH Units)	7.75
Conductivity (µS/cm)	354.00
Temperature (°C)	22.10
Volume Leachant (Litres)	0.856

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.103	**Natural Moisture Content (%)**	14.9
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	87
Particle Size <4mm	>95%		

Case	
SDG	190828-36
Lab Sample Number(s)	20598896
Sampled Date	19-Aug-2019
Customer Sample Ref.	CPB9
Depth (m)	8.60 - 8.60

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Ammoniacal Nitrogen as N	0.332	<0.01	3.32	<0.1	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00401	<0.0005	0.0401	<0.005	-	-	-
Free Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Phenol by HPLC (W)	<0.002	<0.002	<0.02	<0.02	-	-	-
Cresols by HPLC (W)	<0.006	<0.006	<0.06	<0.06	-	-	-
Xylenols by HPLC (W)	<0.008	<0.008	<0.08	<0.08	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Total Monohydric Phenols (W)	<0.016	<0.016	<0.16	<0.16	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	<0.0003	<0.0003	<0.003	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	0.00632	<0.003	0.0632	<0.03	-	-	-
Nickel	0.000706	<0.0004	0.00706	<0.004	-	-	-
Selenium	<0.001	<0.001	<0.01	<0.01	-	-	-
Vanadium	0.00851	<0.001	0.0851	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Acenaphthene by GCMS	0.0000453	<0.000005	0.000453	<0.00005	-	-	-
Acenaphthylene by GCMS	0.0000147	<0.000005	0.000147	<0.00005	-	-	-
Fluoranthene by GCMS	0.000351	<0.000005	0.00351	<0.00005	-	-	-
Anthracene by GCMS	0.0000415	<0.000005	0.000415	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000119	<0.000005	0.000119	<0.00005	-	-	-
Fluorene by GCMS	0.0000435	<0.000005	0.000435	<0.00005	-	-	-
Chrysene by GCMS	0.0000196	<0.000005	0.000196	<0.00005	-	-	-
Pyrene by GCMS	0.000347	<0.000005	0.00347	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.000017	<0.000005	0.00017	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.00000749	<0.000005	0.0000749	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-

Leach Test Information

Date Prepared	05-Sep-2019
pH (pH Units)	8.26
Conductivity (µS/cm)	135.00
Temperature (°C)	19.10
Volume Leachant (Litres)	0.887

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.103	**Natural Moisture Content (%)**	14.9
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	87
Particle Size <4mm	>95%		

Case	
SDG	190828-36
Lab Sample Number(s)	20598896
Sampled Date	19-Aug-2019
Customer Sample Ref.	CPB9
Depth (m)	8.60 - 8.60

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
PAH Spec MS - Aqueous (W)							
PAH 16 EPA Total by GCMS	0.0009	<0.000082	0.009	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	05-Sep-2019
pH (pH Units)	8.26
Conductivity (µS/cm)	135.00
Temperature (°C)	19.10
Volume Leachant (Litres)	0.887

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.195	**Natural Moisture Content (%)**	117
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	46
Particle Size <4mm	>95%		

Case	
SDG	190828-36
Lab Sample Number(s)	20598911
Sampled Date	20-Aug-2019
Customer Sample Ref.	CPBR3
Depth (m)	3.40 - 3.40

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Ammoniacal Nitrogen as N	2.11	<0.01	21.1	<0.1	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00883	<0.0005	0.0883	<0.005	-	-	-
Free Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Phenol by HPLC (W)	<0.002	<0.002	<0.02	<0.02	-	-	-
Cresols by HPLC (W)	<0.006	<0.006	<0.06	<0.06	-	-	-
Xylenols by HPLC (W)	<0.008	<0.008	<0.08	<0.08	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Total Monohydric Phenols (W)	<0.016	<0.016	<0.16	<0.16	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.00282	<0.0003	0.0282	<0.003	-	-	-
Lead	0.000359	<0.0002	0.00359	<0.002	-	-	-
Manganese	0.00507	<0.003	0.0507	<0.03	-	-	-
Nickel	0.0023	<0.0004	0.023	<0.004	-	-	-
Selenium	0.00778	<0.001	0.0778	<0.01	-	-	-
Vanadium	0.341	<0.001	3.41	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.218	<0.019	2.18	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Acenaphthene by GCMS	0.0000721	<0.000005	0.000721	<0.00005	-	-	-
Acenaphthylene by GCMS	0.000022	<0.000005	0.00022	<0.00005	-	-	-
Fluoranthene by GCMS	0.000466	<0.000005	0.00466	<0.00005	-	-	-
Anthracene by GCMS	0.0000871	<0.000005	0.000871	<0.00005	-	-	-
Phenanthrene by GCMS	0.000763	<0.000005	0.00763	<0.00005	-	-	-
Fluorene by GCMS	0.000262	<0.000005	0.00262	<0.00005	-	-	-
Chrysene by GCMS	0.0000484	<0.000005	0.000484	<0.00005	-	-	-
Pyrene by GCMS	0.000297	<0.000005	0.00297	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.0000447	<0.000005	0.000447	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.00004	<0.000005	0.0004	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.0000258	<0.000005	0.000258	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.0000262	<0.000002	0.000262	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	0.0000355	<0.000005	0.000355	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	0.000014	<0.000005	0.00014	<0.00005	-	-	-

Leach Test Information

Date Prepared	05-Sep-2019
pH (pH Units)	10.03
Conductivity (µS/cm)	374.00
Temperature (°C)	19.60
Volume Leachant (Litres)	0.795

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.195	**Natural Moisture Content (%)**	117
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	46
Particle Size <4mm	>95%		

Case	
SDG	190828-36
Lab Sample Number(s)	20598911
Sampled Date	20-Aug-2019
Customer Sample Ref.	CPBR3
Depth (m)	3.40 - 3.40

Eluate Analysis	**C_2** Concⁿ in 10:1 eluate (mg/l)		**A_2** 10:1 concⁿ leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
PAH Spec MS - Aqueous (W)							
PAH 16 EPA Total by GCMS	0.0022	<0.000082	0.022	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	0.029	<0.01	0.29	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	05-Sep-2019
pH (pH Units)	10.03
Conductivity (µS/cm)	374.00
Temperature (°C)	19.60
Volume Leachant (Litres)	0.795

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.290	**Natural Moisture Content (%)**	223
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	31
Particle Size <4mm	>95%		

Case	
SDG	190828-36
Lab Sample Number(s)	20598922
Sampled Date	20-Aug-2019
Customer Sample Ref.	CPBR3
Depth (m)	4.80 - 4.80

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Ammoniacal Nitrogen as N	4.17	<0.01	41.7	<0.1	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.0226	<0.0005	0.226	<0.005	-	-	-
Free Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Phenol by HPLC (W)	<0.002	<0.002	<0.02	<0.02	-	-	-
Cresols by HPLC (W)	<0.006	<0.006	<0.06	<0.06	-	-	-
Xylenols by HPLC (W)	<0.008	<0.008	<0.08	<0.08	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Total Monohydric Phenols (W)	<0.016	<0.016	<0.16	<0.16	-	-	-
Chromium	0.0018	<0.001	0.018	<0.01	-	-	-
Copper	0.00116	<0.0003	0.0116	<0.003	-	-	-
Lead	0.00112	<0.0002	0.0112	<0.002	-	-	-
Manganese	0.105	<0.003	1.05	<0.03	-	-	-
Nickel	0.00257	<0.0004	0.0257	<0.004	-	-	-
Selenium	0.00345	<0.001	0.0345	<0.01	-	-	-
Vanadium	0.0483	<0.001	0.483	<0.01	-	-	-
Zinc	0.00624	<0.001	0.0624	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.4	<0.019	4	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	<0.00002	<0.00002	<0.0002	<0.0002	-	-	-
Acenaphthene by GCMS	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Acenaphthylene by GCMS	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Fluoranthene by GCMS	0.0000646	<0.00001	0.000646	<0.0001	-	-	-
Anthracene by GCMS	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Phenanthrene by GCMS	0.0000301	<0.00001	0.000301	<0.0001	-	-	-
Fluorene by GCMS	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Chrysene by GCMS	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Pyrene by GCMS	0.0000353	<0.00001	0.000353	<0.0001	-	-	-
Benz(a)anthracene by GCMS	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Benzo(b)fluoranthene by GCMS	0.0000136	<0.00001	0.000136	<0.0001	-	-	-
Benzo(k)fluoranthene by GCMS	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Benzo(a)pyrene by GCMS	0.00000663	<0.000004	0.0000663	<0.00004	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Benzo(ghi)perylene by GCMS	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Indeno(123cd)pyrene by GCMS	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-

Leach Test Information

Date Prepared	06-Sep-2019
pH (pH Units)	8.09
Conductivity (µS/cm)	677.00
Temperature (°C)	22.00
Volume Leachant (Litres)	0.699

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.290	**Natural Moisture Content (%)**	223
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	31
Particle Size <4mm	>95%		

Case	
SDG	190828-36
Lab Sample Number(s)	20598922
Sampled Date	20-Aug-2019
Customer Sample Ref.	CPBR3
Depth (m)	4.80 - 4.80

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
PAH Spec MS - Aqueous (W)							
PAH 16 EPA Total by GCMS	<0.000164	<0.000164	<0.00164	<0.00164	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	06-Sep-2019
pH (pH Units)	8.09
Conductivity (µS/cm)	677.00
Temperature (°C)	22.00
Volume Leachant (Litres)	0.699

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.209	**Natural Moisture Content (%)**	133
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	43
Particle Size <4mm	>95%		

Case	
SDG	190828-36
Lab Sample Number(s)	20598930
Sampled Date	20-Aug-2019
Customer Sample Ref.	CPBR3
Depth (m)	7.40 - 7.40

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Ammoniacal Nitrogen as N	3.18	<0.01	31.8	<0.1	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.003	<0.0005	0.03	<0.005	-	-	-
Free Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Phenol by HPLC (W)	<0.002	<0.002	<0.02	<0.02	-	-	-
Cresols by HPLC (W)	<0.006	<0.006	<0.06	<0.06	-	-	-
Xylenols by HPLC (W)	<0.008	<0.008	<0.08	<0.08	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Total Monohydric Phenols (W)	<0.016	<0.016	<0.16	<0.16	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.00145	<0.0003	0.0145	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	0.29	<0.003	2.9	<0.03	-	-	-
Nickel	0.00102	<0.0004	0.0102	<0.004	-	-	-
Selenium	0.00171	<0.001	0.0171	<0.01	-	-	-
Vanadium	0.00607	<0.001	0.0607	<0.01	-	-	-
Zinc	0.00224	<0.001	0.0224	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000153	<0.00001	0.000153	<0.0001	-	-	-
Acenaphthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Acenaphthylene by GCMS	0.00000828	<0.000005	0.0000828	<0.00005	-	-	-
Fluoranthene by GCMS	0.000149	<0.000005	0.00149	<0.00005	-	-	-
Anthracene by GCMS	0.0000156	<0.000005	0.000156	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000798	<0.000005	0.000798	<0.00005	-	-	-
Fluorene by GCMS	0.0000166	<0.000005	0.000166	<0.00005	-	-	-
Chrysene by GCMS	0.000012	<0.000005	0.00012	<0.00005	-	-	-
Pyrene by GCMS	0.0000954	<0.000005	0.000954	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.0000128	<0.000005	0.000128	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.0000198	<0.000005	0.000198	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.00000839	<0.000005	0.0000839	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.0000106	<0.000002	0.000106	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	0.00000997	<0.000005	0.0000997	<0.00005	-	-	-

Leach Test Information

Date Prepared	06-Sep-2019
pH (pH Units)	8.19
Conductivity (µS/cm)	644.00
Temperature (°C)	21.80
Volume Leachant (Litres)	0.780

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.209	**Natural Moisture Content (%)**	133
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	43
Particle Size <4mm	>95%		

Case	
SDG	190828-36
Lab Sample Number(s)	20598930
Sampled Date	20-Aug-2019
Customer Sample Ref.	CPBR3
Depth (m)	7.40 - 7.40

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
PAH Spec MS - Aqueous (W)							
PAH 16 EPA Total by GCMS	0.000453	<0.000082	0.00453	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	06-Sep-2019
pH (pH Units)	8.19
Conductivity (µS/cm)	644.00
Temperature (°C)	21.80
Volume Leachant (Litres)	0.780

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.250	**Natural Moisture Content (%)**	178
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	36
Particle Size <4mm	>95%		

Case	
SDG	190828-36
Lab Sample Number(s)	20598939
Sampled Date	21-Aug-2019
Customer Sample Ref.	CPBR9
Depth (m)	3.10 - 3.10

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Ammoniacal Nitrogen as N	4.91	<0.01	49.1	<0.1	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00146	<0.0005	0.0146	<0.005	-	-	-
Free Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Phenol by HPLC (W)	<0.002	<0.002	<0.02	<0.02	-	-	-
Cresols by HPLC (W)	<0.006	<0.006	<0.06	<0.06	-	-	-
Xylenols by HPLC (W)	<0.008	<0.008	<0.08	<0.08	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Total Monohydric Phenols (W)	<0.016	<0.016	<0.16	<0.16	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	<0.0003	<0.0003	<0.003	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	0.148	<0.003	1.48	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	<0.001	<0.001	<0.01	<0.01	-	-	-
Vanadium	0.00233	<0.001	0.0233	<0.01	-	-	-
Zinc	0.0023	<0.001	0.023	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Acenaphthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000133	<0.000005	0.000133	<0.00005	-	-	-
Anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Phenanthrene by GCMS	0.00000879	<0.000005	0.0000879	<0.00005	-	-	-
Fluorene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.00000911	<0.000005	0.0000911	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-

Leach Test Information

Date Prepared	05-Sep-2019
pH (pH Units)	8.13
Conductivity (µS/cm)	717.00
Temperature (°C)	19.20
Volume Leachant (Litres)	0.740

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.250	**Natural Moisture Content (%)**	178
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	36
Particle Size <4mm	>95%		

Case	
SDG	190828-36
Lab Sample Number(s)	20598939
Sampled Date	21-Aug-2019
Customer Sample Ref.	CPBR9
Depth (m)	3.10 - 3.10

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
PAH Spec MS - Aqueous (W)							
PAH 16 EPA Total by GCMS	<0.000082	<0.000082	<0.00082	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	05-Sep-2019
pH (pH Units)	8.13
Conductivity (µS/cm)	717.00
Temperature (°C)	19.20
Volume Leachant (Litres)	0.740

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.143	**Natural Moisture Content (%)**	58.7
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	63
Particle Size <4mm	>95%		

Case	
SDG	190828-36
Lab Sample Number(s)	20598946
Sampled Date	21-Aug-2019
Customer Sample Ref.	CPBR9
Depth (m)	4.20 - 4.20

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Ammoniacal Nitrogen as N	2.54	<0.01	25.4	<0.1	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00475	<0.0005	0.0475	<0.005	-	-	-
Free Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Phenol by HPLC (W)	<0.002	<0.002	<0.02	<0.02	-	-	-
Cresols by HPLC (W)	<0.006	<0.006	<0.06	<0.06	-	-	-
Xylenols by HPLC (W)	<0.008	<0.008	<0.08	<0.08	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Total Monohydric Phenols (W)	<0.016	<0.016	<0.16	<0.16	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	<0.0003	<0.0003	<0.003	<0.003	-	-	-
Lead	0.000246	<0.0002	0.00246	<0.002	-	-	-
Manganese	0.0631	<0.003	0.631	<0.03	-	-	-
Nickel	0.000702	<0.0004	0.00702	<0.004	-	-	-
Selenium	<0.001	<0.001	<0.01	<0.01	-	-	-
Vanadium	0.0235	<0.001	0.235	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000201	<0.00001	0.000201	<0.0001	-	-	-
Acenaphthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000147	<0.000005	0.000147	<0.00005	-	-	-
Anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000133	<0.000005	0.000133	<0.00005	-	-	-
Fluorene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.0000111	<0.000005	0.000111	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-

Leach Test Information

Date Prepared	05-Sep-2019
pH (pH Units)	7.83
Conductivity (µS/cm)	279.00
Temperature (°C)	19.70
Volume Leachant (Litres)	0.847

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.143	**Natural Moisture Content (%)**	58.7
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	63
Particle Size <4mm	>95%		

Case	
SDG	190828-36
Lab Sample Number(s)	20598946
Sampled Date	21-Aug-2019
Customer Sample Ref.	CPBR9
Depth (m)	4.20 - 4.20

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
PAH Spec MS - Aqueous (W)							
PAH 16 EPA Total by GCMS	<0.000082	<0.000082	<0.00082	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	05-Sep-2019
pH (pH Units)	7.83
Conductivity (µS/cm)	279.00
Temperature (°C)	19.70
Volume Leachant (Litres)	0.847

Mcerts Certification does not apply to leachates

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Validated

CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.117	**Natural Moisture Content (%)**	29.9
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	77
Particle Size <4mm	>95%		

Case	
SDG	190828-36
Lab Sample Number(s)	20598956
Sampled Date	21-Aug-2019
Customer Sample Ref.	CPBR9
Depth (m)	8.80 - 8.80

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Ammoniacal Nitrogen as N	0.679	<0.01	6.79	<0.1	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00476	<0.0005	0.0476	<0.005	-	-	-
Free Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Phenol by HPLC (W)	<0.002	<0.002	<0.02	<0.02	-	-	-
Cresols by HPLC (W)	<0.006	<0.006	<0.06	<0.06	-	-	-
Xylenols by HPLC (W)	<0.008	<0.008	<0.08	<0.08	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Total Monohydric Phenols (W)	<0.016	<0.016	<0.16	<0.16	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	<0.0003	<0.0003	<0.003	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	0.0386	<0.003	0.386	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	<0.001	<0.001	<0.01	<0.01	-	-	-
Vanadium	0.0124	<0.001	0.124	<0.01	-	-	-
Zinc	0.00257	<0.001	0.0257	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000112	<0.00001	0.000112	<0.0001	-	-	-
Acenaphthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.000024	<0.000005	0.00024	<0.00005	-	-	-
Anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000231	<0.000005	0.000231	<0.00005	-	-	-
Fluorene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.000021	<0.000005	0.00021	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-

Leach Test Information

Date Prepared	05-Sep-2019
pH (pH Units)	7.71
Conductivity (µS/cm)	193.00
Temperature (°C)	19.60
Volume Leachant (Litres)	0.873

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.117	**Natural Moisture Content (%)**	29.9
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	77
Particle Size <4mm	>95%		

Case	
SDG	190828-36
Lab Sample Number(s)	20598956
Sampled Date	21-Aug-2019
Customer Sample Ref.	CPBR9
Depth (m)	8.80 - 8.80

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
PAH Spec MS - Aqueous (W)							
PAH 16 EPA Total by GCMS	<0.000082	<0.000082	<0.00082	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	05-Sep-2019
pH (pH Units)	7.71
Conductivity (µS/cm)	193.00
Temperature (°C)	19.60
Volume Leachant (Litres)	0.873

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

Notification of NDPs (No determination possible)

Date Received : 28/08/2019 09:16:25

Sample No	Customer Sample Ref.	Depth (m)	Test	Comment
20598417	WS01	1.80 - 1.80	Asbestos ID in Solid Samples	Sample unsuitable for analysis
20598417	WS01	1.80 - 1.80	Asbestos Quantification - Full	Sample unsuitable for analysis
20598417	WS01	1.80 - 1.80	Total Sulphur	Unsuitable for Analysis
20598417	WS01	1.80 - 1.80	Total Sulphate	Unsuitable for Analysis
20598417	WS01	1.80 - 1.80	TPH CWG GC (S)	Sample unsuitable for analysis
20598417	WS01	1.80 - 1.80	Metals in solid samples by OES	Unsuitable for Analysis
20598417	WS01	1.80 - 1.80	Total Organic Carbon	Unsuitable for Analysis
20598417	WS01	1.80 - 1.80	Anions by Kone (soil)	Unsuitable for Analysis
20598847	CPB9	3.50 - 3.50	Anions by Kone (soil)	Sample cannot be filtered
20598859	CPB9	6.50 - 6.50	Anions by Kone (soil)	Sample cannot be filtered
20598417	WS01	1.80 - 1.80	VOC MS (S)	Sample unsuitable for analysis
20598417	WS01	1.80 - 1.80	GRO by GC-FID (S)	Sample unsuitable for analysis

CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

Table of Results - Appendix

Method No	Reference	Description
PM024	Modified BS 1377	Soil preparation including homogenisation, moisture screens of soils for Asbestos Containing Material
PM115		Leaching Procedure for CEN One Stage Leach Test 2:1 & 10:1 1 Step
TM024	Method 4500A & B, AWWA/APHA, 20th Ed., 1999	Determination of Exchangeable Ammonium and Ammoniacal Nitrogen as N by titration on solids
TM048	HSG 248, Asbestos: The analysts' guide for sampling, analysis and clearance procedures	Identification of Asbestos in Bulk Material
TM062 (S)	National Grid Property Holdings Methods for the Collection & Analysis of Samples from National Grid Sites version 1 Sec 3.9	Determination of Phenols in Soils by HPLC
TM089	Modified: US EPA Methods 8020 & 602	Determination of Gasoline Range Hydrocarbons (GRO) by Headspace GC-FID (C4-C12)
TM099	BS 2690: Part 7:1968 / BS 6068: Part2.11:1984	Determination of Ammonium in Water Samples using the Kone Analyser
TM116	Modified: US EPA Method 8260, 8120, 8020, 624, 610 & 602	Determination of Volatile Organic Compounds by Headspace / GC-MS
TM132	In - house Method	ELTRA CS800 Operators Guide
TM133	BS 1377: Part 3 1990;BS 6068-2.5	Determination of pH in Soil and Water using the GLpH pH Meter
TM152	Method 3125B, AWWA/APHA, 20th Ed., 1999	Analysis of Aqueous Samples by ICP-MS
TM153	Method 4500A,B,C, I, M AWWA/APHA, 20th Ed., 1999	Determination of Total Cyanide, Free (Easily Liberatable) Cyanide and Thiocyanate using the Skalar SANS+ System Segmented Flow Analyser
TM173	Analysis of Petroleum Hydrocarbons in Environmental Media – Total Petroleum Hydrocarbon Criteria	Determination of Speciated Extractable Petroleum Hydrocarbons in Soils by GC-FID
TM174	Analysis of Petroleum Hydrocarbons in Environmental Media – Total Petroleum Hydrocarbon Criteria	Determination of Speciated Extractable Petroleum Hydrocarbons in Waters by GC-FID
TM178	Modified: US EPA Method 8100	Determination of Polynuclear Aromatic Hydrocarbons (PAH) by GC-MS in Waters
TM181	US EPA Method 6010B	Determination of Routine Metals in Soil by iCap 6500 Duo ICP-OES
TM183	BS EN 23506:2002, (BS 6068-2.74:2002) ISBN 0 580 38924 3	Determination of Trace Level Mercury in Waters and Leachates by PSA Cold Vapour Atomic Fluorescence Spectrometry
TM218	Shaker extraction - EPA method 3546.	The determination of PAH in soil samples by GC-MS
TM221	Inductively Coupled Plasma - Atomic Emission Spectroscopy. An Atlas of Spectral Information: Winge, Fassel, Peterson and Floyd	Determination of Acid extractable Sulphate in Soils by IRIS Emission Spectrometer
TM227	Standard methods for the examination of waters and wastewaters 20th Edition, AWWA/APHA Method 4500.	Determination of Total Cyanide, Free (Easily Liberatable) Cyanide and Thiocyanate
TM243		Mixed Anions In Soils By Kone
TM245	By GC-FID	Determination of GRO by Headspace in waters
TM256	The measurement of Electrical Conductivity and the Laboratory determination of pH Value of Natural, Treated and Wastewaters. HMSO, 1978. ISBN 011 751428 4.	Determination of pH in Water and Leachate using the GLpH pH Meter
TM259	by HPLC	Determination of Phenols in Waters and Leachates by HPLC
TM304	HSE Contract research Report no 83/1996	Asbestos Quantification in Soil: Fibres identified by morphology only

NA = not applicable.

Chemical testing (unless subcontracted) performed at ALS Life Sciences Ltd Hawarden (Method codes TM) or ALS Life Sciences Ltd Aberdeen (Method codes S).

CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

Test Completion Dates

Lab Sample No(s)	20598637	20598655	20598666	20598427	20598438	20598446	20598824	20598832	20598839	20598847
Customer Sample Ref.	BHCP105	BHCP105	BHCP105	CPB5	CPB5	CPB5	CPB7	CPB7	CPB7	CPB9
AGS Ref.										
Depth	0.30 - 0.30	0.50 - 0.50	1.00 - 1.00	8.70 - 8.70	7.80 - 7.80	4.00 - 4.00	2.70 - 2.70	4.70 - 4.70	6.60 - 6.60	3.50 - 3.50
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
Ammonium Low	12-Sep-2019	12-Sep-2019	12-Sep-2019	12-Sep-2019	12-Sep-2019	12-Sep-2019	10-Sep-2019	10-Sep-2019	10-Sep-2019	12-Sep-2019
Ammonium Soil by Titration	10-Sep-2019	10-Sep-2019	11-Sep-2019	11-Sep-2019	10-Sep-2019	11-Sep-2019	11-Sep-2019	11-Sep-2019	11-Sep-2019	11-Sep-2019
Anions by Kone (soil)	05-Sep-2019	05-Sep-2019	05-Sep-2019	05-Sep-2019	05-Sep-2019	04-Sep-2019	04-Sep-2019	04-Sep-2019	07-Sep-2019	
Asbestos ID in Solid Samples	30-Aug-2019	30-Aug-2019	30-Aug-2019	04-Sep-2019	03-Sep-2019	04-Sep-2019	03-Sep-2019	05-Sep-2019	03-Sep-2019	04-Sep-2019
CEN 10:1 Leachate (1 Stage)	06-Sep-2019	06-Sep-2019	06-Sep-2019	05-Sep-2019	06-Sep-2019	05-Sep-2019	06-Sep-2019	06-Sep-2019	05-Sep-2019	12-Sep-2019
CEN Readings	09-Sep-2019	09-Sep-2019	09-Sep-2019	08-Sep-2019	09-Sep-2019	09-Sep-2019	09-Sep-2019	09-Sep-2019	09-Sep-2019	11-Sep-2019
Cyanide Comp/Free/Total/Thiocyanate	12-Sep-2019	12-Sep-2019	12-Sep-2019	10-Sep-2019	12-Sep-2019	10-Sep-2019	12-Sep-2019	12-Sep-2019	09-Sep-2019	12-Sep-2019
Dissolved Metals by ICP-MS	13-Sep-2019	13-Sep-2019	13-Sep-2019	14-Sep-2019	13-Sep-2019	14-Sep-2019	13-Sep-2019	13-Sep-2019	17-Sep-2019	13-Sep-2019
EPH CWG (Aliphatic) Aqueous GC (W)	13-Sep-2019	13-Sep-2019	13-Sep-2019	12-Sep-2019	12-Sep-2019	13-Sep-2019	13-Sep-2019	12-Sep-2019	12-Sep-2019	12-Sep-2019
EPH CWG (Aliphatic) GC (S)	03-Sep-2019	04-Sep-2019	04-Sep-2019	04-Sep-2019	03-Sep-2019	04-Sep-2019	04-Sep-2019	03-Sep-2019	03-Sep-2019	11-Sep-2019
EPH CWG (Aromatic) Aqueous GC (W)	13-Sep-2019	13-Sep-2019	13-Sep-2019	12-Sep-2019	12-Sep-2019	13-Sep-2019	13-Sep-2019	12-Sep-2019	12-Sep-2019	12-Sep-2019
EPH CWG (Aromatic) GC (S)	03-Sep-2019	04-Sep-2019	04-Sep-2019	04-Sep-2019	03-Sep-2019	04-Sep-2019	04-Sep-2019	03-Sep-2019	03-Sep-2019	11-Sep-2019
GRO by GC-FID (S)	12-Sep-2019	12-Sep-2019	12-Sep-2019	11-Sep-2019	11-Sep-2019	11-Sep-2019	11-Sep-2019	11-Sep-2019	11-Sep-2019	11-Sep-2019
GRO by GC-FID (W)	10-Sep-2019	10-Sep-2019	10-Sep-2019	09-Sep-2019	10-Sep-2019	09-Sep-2019	10-Sep-2019	10-Sep-2019	10-Sep-2019	11-Sep-2019
Mercury Dissolved	10-Sep-2019	10-Sep-2019	10-Sep-2019	10-Sep-2019	10-Sep-2019	10-Sep-2019	11-Sep-2019	10-Sep-2019	10-Sep-2019	12-Sep-2019
Metals in solid samples by OES	09-Sep-2019	10-Sep-2019	10-Sep-2019	09-Sep-2019	10-Sep-2019	09-Sep-2019	06-Sep-2019	09-Sep-2019	09-Sep-2019	09-Sep-2019
PAH by GCMS	11-Sep-2019	12-Sep-2019	12-Sep-2019	04-Sep-2019	05-Sep-2019	04-Sep-2019	04-Sep-2019	04-Sep-2019	05-Sep-2019	05-Sep-2019
PAH Spec MS - Aqueous (W)	12-Sep-2019	12-Sep-2019	12-Sep-2019	12-Sep-2019	12-Sep-2019	12-Sep-2019	12-Sep-2019	12-Sep-2019	12-Sep-2019	13-Sep-2019
pH	03-Sep-2019	11-Sep-2019	11-Sep-2019	11-Sep-2019	11-Sep-2019	11-Sep-2019	11-Sep-2019	11-Sep-2019	11-Sep-2019	11-Sep-2019
pH Value	12-Sep-2019	12-Sep-2019	10-Sep-2019	12-Sep-2019	10-Sep-2019	11-Sep-2019	12-Sep-2019	10-Sep-2019	11-Sep-2019	12-Sep-2019
Phenols by HPLC (S)	05-Sep-2019	04-Sep-2019	07-Sep-2019	03-Sep-2019	11-Sep-2019	03-Sep-2019	11-Sep-2019	05-Sep-2019	12-Sep-2019	12-Sep-2019
Phenols by HPLC (W)	11-Sep-2019	11-Sep-2019	11-Sep-2019	13-Sep-2019	11-Sep-2019	12-Sep-2019	11-Sep-2019	12-Sep-2019	12-Sep-2019	12-Sep-2019
Sample description	29-Aug-2019	29-Aug-2019	29-Aug-2019	29-Aug-2019	28-Aug-2019	29-Aug-2019	28-Aug-2019	28-Aug-2019	29-Aug-2019	29-Aug-2019
Total Organic Carbon	11-Sep-2019	11-Sep-2019	12-Sep-2019	11-Sep-2019	12-Sep-2019	12-Sep-2019	12-Sep-2019	12-Sep-2019	11-Sep-2019	12-Sep-2019
Total Sulphate	06-Sep-2019	06-Sep-2019	06-Sep-2019	05-Sep-2019	06-Sep-2019	09-Sep-2019	09-Sep-2019	09-Sep-2019	09-Sep-2019	05-Sep-2019
Total Sulphur	05-Sep-2019	04-Sep-2019	04-Sep-2019	05-Sep-2019	11-Sep-2019	06-Sep-2019	04-Sep-2019	05-Sep-2019	05-Sep-2019	04-Sep-2019
TPH CWG (W)	13-Sep-2019	13-Sep-2019	13-Sep-2019	12-Sep-2019	12-Sep-2019	13-Sep-2019	13-Sep-2019	12-Sep-2019	12-Sep-2019	12-Sep-2019
TPH CWG GC (S)	12-Sep-2019	12-Sep-2019	12-Sep-2019	11-Sep-2019	11-Sep-2019	11-Sep-2019	11-Sep-2019	11-Sep-2019	11-Sep-2019	11-Sep-2019
VOC MS (S)	11-Sep-2019	11-Sep-2019	11-Sep-2019	11-Sep-2019	11-Sep-2019	11-Sep-2019	11-Sep-2019	11-Sep-2019	11-Sep-2019	11-Sep-2019

Lab Sample No(s)	20598859	20598882	20598896	20598788	20598798	20598808	20598466	20598492	20598531	20598207
Customer Sample Ref.	CPB9	CPB9	CPB9	CPB11	CPB11	CPB11	CPB13	CPB13	CPB13	CPB18
AGS Ref.										
Depth	6.50 - 6.50	7.60 - 7.60	8.60 - 8.60	3.50 - 3.50	5.50 - 5.50	9.50 - 9.50	4.20 - 4.20	2.20 - 2.20	10.10 - 10.10	0.30 - 0.30
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
Ammonium Low	12-Sep-2019	12-Sep-2019	12-Sep-2019	10-Sep-2019	12-Sep-2019	12-Sep-2019	12-Sep-2019	10-Sep-2019	10-Sep-2019	12-Sep-2019
Ammonium Soil by Titration	11-Sep-2019	10-Sep-2019	11-Sep-2019	11-Sep-2019	10-Sep-2019	11-Sep-2019	10-Sep-2019	10-Sep-2019	11-Sep-2019	10-Sep-2019
Anions by Kone (soil)		04-Sep-2019	05-Sep-2019	07-Sep-2019	07-Sep-2019	07-Sep-2019	04-Sep-2019	04-Sep-2019	05-Sep-2019	03-Sep-2019
Asbestos ID in Solid Samples	04-Sep-2019	04-Sep-2019	30-Aug-2019	03-Sep-2019	02-Sep-2019	03-Sep-2019	03-Sep-2019	04-Sep-2019	30-Aug-2019	03-Sep-2019
CEN 10:1 Leachate (1 Stage)	05-Sep-2019	07-Sep-2019	05-Sep-2019	05-Sep-2019	06-Sep-2019	05-Sep-2019	05-Sep-2019	07-Sep-2019	07-Sep-2019	05-Sep-2019
CEN Readings	09-Sep-2019	11-Sep-2019	08-Sep-2019	09-Sep-2019	09-Sep-2019	09-Sep-2019	09-Sep-2019	09-Sep-2019	09-Sep-2019	09-Sep-2019
Cyanide Comp/Free/Total/Thiocyanate	10-Sep-2019	12-Sep-2019	10-Sep-2019	10-Sep-2019	12-Sep-2019	10-Sep-2019	10-Sep-2019	12-Sep-2019	12-Sep-2019	10-Sep-2019
Dissolved Metals by ICP-MS	14-Sep-2019	13-Sep-2019	17-Sep-2019	14-Sep-2019	13-Sep-2019	17-Sep-2019	17-Sep-2019	13-Sep-2019	13-Sep-2019	14-Sep-2019
EPH CWG (Aliphatic) Aqueous GC (W)	13-Sep-2019	12-Sep-2019	12-Sep-2019	13-Sep-2019	12-Sep-2019	12-Sep-2019	12-Sep-2019	12-Sep-2019	12-Sep-2019	12-Sep-2019
EPH CWG (Aliphatic) GC (S)	11-Sep-2019	03-Sep-2019	04-Sep-2019	03-Sep-2019	03-Sep-2019	04-Sep-2019	04-Sep-2019	04-Sep-2019	04-Sep-2019	03-Sep-2019
EPH CWG (Aromatic) Aqueous GC (W)	13-Sep-2019	12-Sep-2019	12-Sep-2019	13-Sep-2019	12-Sep-2019	12-Sep-2019	12-Sep-2019	12-Sep-2019	12-Sep-2019	12-Sep-2019
EPH CWG (Aromatic) GC (S)	11-Sep-2019	03-Sep-2019	04-Sep-2019	03-Sep-2019	03-Sep-2019	04-Sep-2019	04-Sep-2019	04-Sep-2019	04-Sep-2019	03-Sep-2019
GRO by GC-FID (S)	11-Sep-2019	11-Sep-2019	11-Sep-2019	11-Sep-2019	11-Sep-2019	11-Sep-2019	11-Sep-2019	11-Sep-2019	11-Sep-2019	12-Sep-2019
GRO by GC-FID (W)	10-Sep-2019	11-Sep-2019	09-Sep-2019	10-Sep-2019	11-Sep-2019	10-Sep-2019	10-Sep-2019	10-Sep-2019	10-Sep-2019	10-Sep-2019
Mercury Dissolved	10-Sep-2019	12-Sep-2019	10-Sep-2019	11-Sep-2019	10-Sep-2019	10-Sep-2019	09-Sep-2019	10-Sep-2019	10-Sep-2019	10-Sep-2019
Metals in solid samples by OES	09-Sep-2019	09-Sep-2019	09-Sep-2019	06-Sep-2019	06-Sep-2019	09-Sep-2019	09-Sep-2019	10-Sep-2019	06-Sep-2019	06-Sep-2019
PAH by GCMS	05-Sep-2019	12-Sep-2019	12-Sep-2019	05-Sep-2019	02-Sep-2019	11-Sep-2019	12-Sep-2019	12-Sep-2019	02-Sep-2019	09-Sep-2019
PAH Spec MS - Aqueous (W)	12-Sep-2019	12-Sep-2019	12-Sep-2019	12-Sep-2019	12-Sep-2019	12-Sep-2019	12-Sep-2019	12-Sep-2019	12-Sep-2019	11-Sep-2019
pH	11-Sep-2019	11-Sep-2019	11-Sep-2019	11-Sep-2019	03-Sep-2019	11-Sep-2019	11-Sep-2019	11-Sep-2019	12-Sep-2019	03-Sep-2019
pH Value	11-Sep-2019	12-Sep-2019	11-Sep-2019	11-Sep-2019	12-Sep-2019	11-Sep-2019	12-Sep-2019	11-Sep-2019	11-Sep-2019	11-Sep-2019
Phenols by HPLC (S)	12-Sep-2019	03-Sep-2019	04-Sep-2019	07-Sep-2019	03-Sep-2019	12-Sep-2019	03-Sep-2019	05-Sep-2019	03-Sep-2019	07-Sep-2019
Phenols by HPLC (W)	12-Sep-2019	12-Sep-2019	12-Sep-2019	12-Sep-2019	11-Sep-2019	12-Sep-2019	12-Sep-2019	11-Sep-2019	11-Sep-2019	11-Sep-2019
Sample description	29-Aug-2019	29-Aug-2019	29-Aug-2019	28-Aug-2019	28-Aug-2019	29-Aug-2019	29-Aug-2019	29-Aug-2019	28-Aug-2019	28-Aug-2019
Total Organic Carbon	12-Sep-2019	12-Sep-2019	11-Sep-2019	11-Sep-2019	12-Sep-2019	11-Sep-2019	11-Sep-2019	12-Sep-2019	11-Sep-2019	11-Sep-2019
Total Sulphate	09-Sep-2019	06-Sep-2019	05-Sep-2019	06-Sep-2019	09-Sep-2019	09-Sep-2019	09-Sep-2019	09-Sep-2019	09-Sep-2019	05-Sep-2019
Total Sulphur	12-Sep-2019	05-Sep-2019	05-Sep-2019	04-Sep-2019	04-Sep-2019	05-Sep-2019	11-Sep-2019	11-Sep-2019	04-Sep-2019	03-Sep-2019
TPH CWG (W)	13-Sep-2019	12-Sep-2019	12-Sep-2019	13-Sep-2019	12-Sep-2019	12-Sep-2019	12-Sep-2019	12-Sep-2019	12-Sep-2019	12-Sep-2019
TPH CWG GC (S)	11-Sep-2019	11-Sep-2019	11-Sep-2019	11-Sep-2019	11-Sep-2019	11-Sep-2019	11-Sep-2019	11-Sep-2019	11-Sep-2019	12-Sep-2019
VOC MS (S)	11-Sep-2019	11-Sep-2019	11-Sep-2019	11-Sep-2019	11-Sep-2019	11-Sep-2019	11-Sep-2019	11-Sep-2019	11-Sep-2019	11-Sep-2019

Validated

CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

Lab Sample No(s)	20598340	20598478	20598715	20598729	20598741	20598817	20598911	20598922	20598930	20598217
Customer Sample Ref.	CPB18	CPB18	CPBP101	CPBP101	CPBP101	CPBR3	CPBR3	CPBR3	CPBR3	CPBR4
AGS Ref.										
Depth	0.50 - 0.50	1.90 - 1.90	0.30 - 0.30	1.00 - 1.00	1.50 - 1.50	9.10 - 9.10	3.40 - 3.40	4.80 - 4.80	7.40 - 7.40	2.50 - 2.50
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
Ammonium Low	12-Sep-2019		12-Sep-2019	12-Sep-2019	12-Sep-2019	12-Sep-2019	10-Sep-2019	12-Sep-2019	12-Sep-2019	10-Sep-2019
Ammonium Soil by Titration	10-Sep-2019	10-Sep-2019	10-Sep-2019	10-Sep-2019	10-Sep-2019	11-Sep-2019	11-Sep-2019	11-Sep-2019	11-Sep-2019	10-Sep-2019
Anions by Kone (soil)	04-Sep-2019	03-Sep-2019	05-Sep-2019	04-Sep-2019	05-Sep-2019	05-Sep-2019	04-Sep-2019	04-Sep-2019	05-Sep-2019	07-Sep-2019
Asbestos ID in Solid Samples	30-Aug-2019	03-Sep-2019	30-Aug-2019	30-Aug-2019	30-Aug-2019	04-Sep-2019	04-Sep-2019	04-Sep-2019	04-Sep-2019	02-Sep-2019
Asbestos Quantification - Full		11-Sep-2019		11-Sep-2019						
CEN 10:1 Leachate (1 Stage)	05-Sep-2019		06-Sep-2019	06-Sep-2019	06-Sep-2019	06-Sep-2019	05-Sep-2019	12-Sep-2019	06-Sep-2019	05-Sep-2019
CEN Readings	09-Sep-2019		08-Sep-2019	09-Sep-2019	09-Sep-2019	09-Sep-2019	09-Sep-2019	11-Sep-2019	11-Sep-2019	09-Sep-2019
Cyanide Comp/Free/Total/Thiocyanate	09-Sep-2019	03-Sep-2019	12-Sep-2019	12-Sep-2019	12-Sep-2019	12-Sep-2019	10-Sep-2019	12-Sep-2019	12-Sep-2019	09-Sep-2019
Dissolved Metals by ICP-MS	14-Sep-2019		13-Sep-2019	13-Sep-2019	13-Sep-2019	13-Sep-2019	17-Sep-2019	14-Sep-2019	13-Sep-2019	17-Sep-2019
EPH CWG (Aliphatic) Aqueous GC (W)	12-Sep-2019		13-Sep-2019	12-Sep-2019	13-Sep-2019	12-Sep-2019	12-Sep-2019	12-Sep-2019	13-Sep-2019	13-Sep-2019
EPH CWG (Aliphatic) GC (S)	03-Sep-2019	03-Sep-2019	03-Sep-2019	04-Sep-2019	04-Sep-2019	11-Sep-2019	11-Sep-2019	11-Sep-2019	11-Sep-2019	04-Sep-2019
EPH CWG (Aromatic) Aqueous GC (W)	12-Sep-2019		13-Sep-2019	12-Sep-2019	13-Sep-2019	12-Sep-2019	12-Sep-2019	12-Sep-2019	13-Sep-2019	13-Sep-2019
EPH CWG (Aromatic) GC (S)	03-Sep-2019	03-Sep-2019	03-Sep-2019	04-Sep-2019	04-Sep-2019	11-Sep-2019	11-Sep-2019	11-Sep-2019	11-Sep-2019	04-Sep-2019
GRO by GC-FID (S)	12-Sep-2019	12-Sep-2019	12-Sep-2019	12-Sep-2019	12-Sep-2019	12-Sep-2019	11-Sep-2019	11-Sep-2019	11-Sep-2019	12-Sep-2019
GRO by GC-FID (W)	10-Sep-2019		10-Sep-2019	10-Sep-2019	10-Sep-2019	10-Sep-2019	10-Sep-2019	11-Sep-2019	11-Sep-2019	10-Sep-2019
Mercury Dissolved	10-Sep-2019		10-Sep-2019	10-Sep-2019	10-Sep-2019	10-Sep-2019	11-Sep-2019	12-Sep-2019	12-Sep-2019	11-Sep-2019
Metals in solid samples by OES	09-Sep-2019	06-Sep-2019	10-Sep-2019	10-Sep-2019	10-Sep-2019	06-Sep-2019	10-Sep-2019	09-Sep-2019	10-Sep-2019	09-Sep-2019
PAH by GCMS	09-Sep-2019	04-Sep-2019	12-Sep-2019	12-Sep-2019	04-Sep-2019	05-Sep-2019	12-Sep-2019	05-Sep-2019	05-Sep-2019	04-Sep-2019
PAH Spec MS - Aqueous (W)	11-Sep-2019		12-Sep-2019	12-Sep-2019	12-Sep-2019	12-Sep-2019	12-Sep-2019	12-Sep-2019	12-Sep-2019	12-Sep-2019
pH	12-Sep-2019	12-Sep-2019	11-Sep-2019	12-Sep-2019	11-Sep-2019	11-Sep-2019	12-Sep-2019	12-Sep-2019	11-Sep-2019	11-Sep-2019
pH Value	11-Sep-2019		11-Sep-2019	11-Sep-2019	10-Sep-2019	11-Sep-2019	11-Sep-2019	12-Sep-2019	12-Sep-2019	11-Sep-2019
Phenols by HPLC (S)	07-Sep-2019	12-Sep-2019	12-Sep-2019	09-Sep-2019	05-Sep-2019	12-Sep-2019	12-Sep-2019	12-Sep-2019	12-Sep-2019	05-Sep-2019
Phenols by HPLC (W)	11-Sep-2019		12-Sep-2019	12-Sep-2019	12-Sep-2019	12-Sep-2019	12-Sep-2019	12-Sep-2019	12-Sep-2019	11-Sep-2019
Sample description	28-Aug-2019	29-Aug-2019	29-Aug-2019	29-Aug-2019	29-Aug-2019	29-Aug-2019	29-Aug-2019	29-Aug-2019	29-Aug-2019	29-Aug-2019
Total Organic Carbon	12-Sep-2019	12-Sep-2019	11-Sep-2019	12-Sep-2019	11-Sep-2019	12-Sep-2019	12-Sep-2019	12-Sep-2019	12-Sep-2019	12-Sep-2019
Total Sulphate	09-Sep-2019	09-Sep-2019	05-Sep-2019	05-Sep-2019	09-Sep-2019	06-Sep-2019	09-Sep-2019	06-Sep-2019	06-Sep-2019	06-Sep-2019
Total Sulphur	05-Sep-2019	04-Sep-2019	06-Sep-2019	06-Sep-2019	06-Sep-2019	04-Sep-2019	11-Sep-2019	11-Sep-2019	11-Sep-2019	04-Sep-2019
TPH CWG (W)	12-Sep-2019		13-Sep-2019	12-Sep-2019	13-Sep-2019	12-Sep-2019	12-Sep-2019	12-Sep-2019	13-Sep-2019	13-Sep-2019
TPH CWG GC (S)	12-Sep-2019	12-Sep-2019	12-Sep-2019	12-Sep-2019	12-Sep-2019	12-Sep-2019	11-Sep-2019	11-Sep-2019	11-Sep-2019	12-Sep-2019
VOC MS (S)	11-Sep-2019	11-Sep-2019	10-Sep-2019	11-Sep-2019	10-Sep-2019	11-Sep-2019	11-Sep-2019	11-Sep-2019	11-Sep-2019	11-Sep-2019

Lab Sample No(s)	20598227	20598239	20598248	20598939	20598946	20598956	20598388	20598407	20598417	20598362
Customer Sample Ref.	CPBR4	CPBR4	CPBR4	CPBR9	CPBR9	CPBR9	WS01	WS01	WS01	WS04
AGS Ref.										
Depth	3.50 - 3.50	7.50 - 7.50	9.40 - 9.40	3.10 - 3.10	4.20 - 4.20	8.80 - 8.80	0.30 - 0.30	0.50 - 0.50	1.80 - 1.80	0.30 - 0.30
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
Ammonium Low	10-Sep-2019	12-Sep-2019		12-Sep-2019	12-Sep-2019	12-Sep-2019	12-Sep-2019	12-Sep-2019		12-Sep-2019
Ammonium Soil by Titration	10-Sep-2019	11-Sep-2019	11-Sep-2019	11-Sep-2019	11-Sep-2019	11-Sep-2019	11-Sep-2019	10-Sep-2019	13-Sep-2019	11-Sep-2019
Anions by Kone (soil)	07-Sep-2019	07-Sep-2019	07-Sep-2019	07-Sep-2019	07-Sep-2019	04-Sep-2019	05-Sep-2019	07-Sep-2019		07-Sep-2019
Asbestos ID in Solid Samples	04-Sep-2019	03-Sep-2019	03-Sep-2019	03-Sep-2019	03-Sep-2019	30-Aug-2019	30-Aug-2019	30-Aug-2019		02-Sep-2019
Asbestos Quantification - Full										11-Sep-2019
CEN 10:1 Leachate (1 Stage)	05-Sep-2019	05-Sep-2019		05-Sep-2019	05-Sep-2019	05-Sep-2019	12-Sep-2019	12-Sep-2019		05-Sep-2019
CEN Readings	09-Sep-2019	09-Sep-2019		09-Sep-2019	09-Sep-2019	09-Sep-2019	11-Sep-2019	11-Sep-2019		08-Sep-2019
Cyanide Comp/Free/Total/Thiocyanate	09-Sep-2019	10-Sep-2019	11-Sep-2019	11-Sep-2019	11-Sep-2019	11-Sep-2019	12-Sep-2019	12-Sep-2019	13-Sep-2019	09-Sep-2019
Dissolved Metals by ICP-MS	14-Sep-2019	14-Sep-2019		14-Sep-2019	14-Sep-2019	14-Sep-2019	14-Sep-2019	14-Sep-2019		17-Sep-2019
EPH CWG (Aliphatic) Aqueous GC (W)	12-Sep-2019	12-Sep-2019		12-Sep-2019	13-Sep-2019	12-Sep-2019	12-Sep-2019	12-Sep-2019		13-Sep-2019
EPH CWG (Aliphatic) GC (S)	04-Sep-2019	11-Sep-2019	11-Sep-2019	11-Sep-2019	11-Sep-2019	11-Sep-2019	03-Sep-2019	03-Sep-2019	13-Sep-2019	03-Sep-2019
EPH CWG (Aromatic) Aqueous GC (W)	12-Sep-2019	12-Sep-2019		12-Sep-2019	13-Sep-2019	12-Sep-2019	12-Sep-2019	12-Sep-2019		13-Sep-2019
EPH CWG (Aromatic) GC (S)	04-Sep-2019	11-Sep-2019	11-Sep-2019	11-Sep-2019	11-Sep-2019	11-Sep-2019	03-Sep-2019	03-Sep-2019	13-Sep-2019	03-Sep-2019
GRO by GC-FID (S)	11-Sep-2019	11-Sep-2019	12-Sep-2019	11-Sep-2019	11-Sep-2019	11-Sep-2019	12-Sep-2019	12-Sep-2019		11-Sep-2019
GRO by GC-FID (W)	10-Sep-2019	09-Sep-2019		10-Sep-2019	09-Sep-2019	10-Sep-2019	13-Sep-2019	11-Sep-2019		10-Sep-2019
Mercury Dissolved	11-Sep-2019	10-Sep-2019		10-Sep-2019	10-Sep-2019	10-Sep-2019	12-Sep-2019	12-Sep-2019		10-Sep-2019
Metals in solid samples by OES	09-Sep-2019	09-Sep-2019	06-Sep-2019	09-Sep-2019	09-Sep-2019	06-Sep-2019	10-Sep-2019	09-Sep-2019		10-Sep-2019
PAH by GCMS	04-Sep-2019	11-Sep-2019	12-Sep-2019	05-Sep-2019	05-Sep-2019	05-Sep-2019	05-Sep-2019	05-Sep-2019	13-Sep-2019	11-Sep-2019
PAH Spec MS - Aqueous (W)	12-Sep-2019	12-Sep-2019		12-Sep-2019	12-Sep-2019	12-Sep-2019	12-Sep-2019	12-Sep-2019		12-Sep-2019
pH	11-Sep-2019	11-Sep-2019	12-Sep-2019	12-Sep-2019	11-Sep-2019	12-Sep-2019	11-Sep-2019	12-Sep-2019	12-Sep-2019	12-Sep-2019
pH Value	11-Sep-2019	11-Sep-2019		11-Sep-2019	11-Sep-2019	10-Sep-2019	12-Sep-2019	12-Sep-2019		11-Sep-2019
Phenols by HPLC (S)	05-Sep-2019	12-Sep-2019	12-Sep-2019	12-Sep-2019	12-Sep-2019	12-Sep-2019	07-Sep-2019	07-Sep-2019	13-Sep-2019	03-Sep-2019
Phenols by HPLC (W)	12-Sep-2019	12-Sep-2019		12-Sep-2019	12-Sep-2019	11-Sep-2019	13-Sep-2019	13-Sep-2019		11-Sep-2019
Sample description	29-Aug-2019	29-Aug-2019	29-Aug-2019	29-Aug-2019	29-Aug-2019	29-Aug-2019	28-Aug-2019	28-Aug-2019	29-Aug-2019	29-Aug-2019
Total Organic Carbon	11-Sep-2019	11-Sep-2019	11-Sep-2019	11-Sep-2019	11-Sep-2019	12-Sep-2019	11-Sep-2019	11-Sep-2019		11-Sep-2019
Total Sulphate	06-Sep-2019	06-Sep-2019	09-Sep-2019	06-Sep-2019	09-Sep-2019	09-Sep-2019	06-Sep-2019	09-Sep-2019		09-Sep-2019
Total Sulphur	05-Sep-2019	12-Sep-2019	06-Sep-2019	11-Sep-2019	11-Sep-2019	06-Sep-2019	04-Sep-2019	04-Sep-2019		04-Sep-2019
TPH CWG (W)	12-Sep-2019	12-Sep-2019		12-Sep-2019	13-Sep-2019	12-Sep-2019	13-Sep-2019	12-Sep-2019		13-Sep-2019
TPH CWG GC (S)	11-Sep-2019	11-Sep-2019	12-Sep-2019	11-Sep-2019	11-Sep-2019	11-Sep-2019	12-Sep-2019	12-Sep-2019		11-Sep-2019
VOC MS (S)	11-Sep-2019	11-Sep-2019	10-Sep-2019	11-Sep-2019	11-Sep-2019	11-Sep-2019	11-Sep-2019	11-Sep-2019		12-Sep-2019

Validated

CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

Lab Sample No(s)	20598372	20598505	20598264	20598278	20598286	20598295	20598310	20598327	20598351	20598518
Customer Sample Ref.	WS04	WS04	WS13	WS13	WS13	WS13	WS19	WS19	WS19	WS20
AGS Ref.										
Depth	1.00 - 1.00	3.40 - 3.80	0.30 - 0.30	0.50 - 0.50	1.00 - 1.00	1.80 - 1.80	0.30 - 0.30	1.00 - 1.00	1.80 - 1.80	1.80 - 1.80
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
Ammonium Low	12-Sep-2019	10-Sep-2019	12-Sep-2019	12-Sep-2019			12-Sep-2019	12-Sep-2019		
Ammonium Soil by Titration	11-Sep-2019	11-Sep-2019	10-Sep-2019	11-Sep-2019	11-Sep-2019	11-Sep-2019	10-Sep-2019	11-Sep-2019	10-Sep-2019	10-Sep-2019
Anions by Kone (soil)	04-Sep-2019	07-Sep-2019	05-Sep-2019	05-Sep-2019	07-Sep-2019	07-Sep-2019	05-Sep-2019	05-Sep-2019	07-Sep-2019	07-Sep-2019
Asbestos ID in Solid Samples	03-Sep-2019	03-Sep-2019	30-Aug-2019	30-Aug-2019	02-Sep-2019	04-Sep-2019	30-Aug-2019	30-Aug-2019	04-Sep-2019	03-Sep-2019
CEN 10:1 Leachate (1 Stage)	05-Sep-2019	05-Sep-2019	05-Sep-2019	05-Sep-2019			05-Sep-2019	05-Sep-2019		
CEN Readings	09-Sep-2019	09-Sep-2019	09-Sep-2019	09-Sep-2019			09-Sep-2019	09-Sep-2019		
Cyanide Comp/Free/Total/Thiocyanate	09-Sep-2019	09-Sep-2019	10-Sep-2019	10-Sep-2019	11-Sep-2019	11-Sep-2019	10-Sep-2019	09-Sep-2019	02-Sep-2019	02-Sep-2019
Dissolved Metals by ICP-MS	14-Sep-2019	14-Sep-2019	14-Sep-2019	14-Sep-2019			14-Sep-2019	14-Sep-2019		
EPH CWG (Aliphatic) Aqueous GC (W)	12-Sep-2019	12-Sep-2019	12-Sep-2019	12-Sep-2019			12-Sep-2019	12-Sep-2019		
EPH CWG (Aliphatic) GC (S)	04-Sep-2019	03-Sep-2019	11-Sep-2019	11-Sep-2019	11-Sep-2019	11-Sep-2019	04-Sep-2019	04-Sep-2019	04-Sep-2019	03-Sep-2019
EPH CWG (Aromatic) Aqueous GC (W)	12-Sep-2019	12-Sep-2019	12-Sep-2019	12-Sep-2019			12-Sep-2019	12-Sep-2019		
EPH CWG (Aromatic) GC (S)	04-Sep-2019	03-Sep-2019	11-Sep-2019	11-Sep-2019	11-Sep-2019	11-Sep-2019	04-Sep-2019	04-Sep-2019	04-Sep-2019	03-Sep-2019
GRO by GC-FID (S)	11-Sep-2019	11-Sep-2019	12-Sep-2019	12-Sep-2019	11-Sep-2019	12-Sep-2019	11-Sep-2019	12-Sep-2019	12-Sep-2019	11-Sep-2019
GRO by GC-FID (W)	09-Sep-2019	09-Sep-2019	10-Sep-2019	09-Sep-2019			09-Sep-2019	10-Sep-2019		
Mercury Dissolved	10-Sep-2019	11-Sep-2019	09-Sep-2019	10-Sep-2019			10-Sep-2019	10-Sep-2019		
Metals in solid samples by OES	09-Sep-2019	09-Sep-2019	06-Sep-2019	09-Sep-2019	09-Sep-2019	09-Sep-2019	09-Sep-2019	06-Sep-2019	09-Sep-2019	06-Sep-2019
PAH by GCMS	11-Sep-2019	05-Sep-2019	12-Sep-2019	02-Sep-2019	05-Sep-2019	02-Sep-2019	05-Sep-2019	05-Sep-2019	05-Sep-2019	05-Sep-2019
PAH Spec MS - Aqueous (W)	12-Sep-2019	12-Sep-2019	12-Sep-2019	12-Sep-2019			12-Sep-2019	12-Sep-2019		
pH	11-Sep-2019	03-Sep-2019	11-Sep-2019	12-Sep-2019	11-Sep-2019	11-Sep-2019	03-Sep-2019	03-Sep-2019	11-Sep-2019	03-Sep-2019
pH Value	11-Sep-2019	11-Sep-2019	10-Sep-2019	12-Sep-2019			11-Sep-2019	11-Sep-2019		
Phenols by HPLC (S)	12-Sep-2019	03-Sep-2019	12-Sep-2019	12-Sep-2019	12-Sep-2019	12-Sep-2019	11-Sep-2019	07-Sep-2019	03-Sep-2019	07-Sep-2019
Phenols by HPLC (W)	12-Sep-2019	11-Sep-2019	11-Sep-2019	12-Sep-2019			12-Sep-2019	12-Sep-2019		
Sample description	29-Aug-2019	28-Aug-2019	29-Aug-2019	29-Aug-2019	29-Aug-2019	29-Aug-2019	29-Aug-2019	29-Aug-2019	29-Aug-2019	28-Aug-2019
Total Organic Carbon	12-Sep-2019	12-Sep-2019	11-Sep-2019	11-Sep-2019	11-Sep-2019	11-Sep-2019	11-Sep-2019	12-Sep-2019	12-Sep-2019	12-Sep-2019
Total Sulphate	09-Sep-2019	09-Sep-2019	09-Sep-2019	09-Sep-2019	06-Sep-2019	09-Sep-2019	09-Sep-2019	09-Sep-2019	09-Sep-2019	09-Sep-2019
Total Sulphur	05-Sep-2019	05-Sep-2019	03-Sep-2019	04-Sep-2019	04-Sep-2019	11-Sep-2019	04-Sep-2019	04-Sep-2019	05-Sep-2019	04-Sep-2019
TPH CWG (W)	12-Sep-2019	12-Sep-2019	12-Sep-2019	12-Sep-2019			12-Sep-2019	12-Sep-2019		
TPH CWG GC (S)	11-Sep-2019	11-Sep-2019	12-Sep-2019	12-Sep-2019	11-Sep-2019	12-Sep-2019	11-Sep-2019	12-Sep-2019	12-Sep-2019	11-Sep-2019
VOC MS (S)	11-Sep-2019	11-Sep-2019	11-Sep-2019	11-Sep-2019	11-Sep-2019	12-Sep-2019	11-Sep-2019	11-Sep-2019	11-Sep-2019	11-Sep-2019

Lab Sample No(s)	20598585	20598597	20598613	20598682	20598696	20598707	20598541	20598552	20598565	20598757
Customer Sample Ref.	WSBP104	WSBP104	WSBP104	WSBP105	WSBP105	WSBP105	WSBP108	WSBP108	WSBP108	WSBP108
AGS Ref.										
Depth	0.30 - 0.30	1.00 - 1.00	1.80 - 1.80	0.30 - 0.30	1.00 - 1.00	1.40 - 1.40	0.30 - 0.30	1.00 - 1.00	1.50 - 1.50	2.10 - 2.50
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
Ammonium Low	12-Sep-2019	12-Sep-2019	12-Sep-2019	12-Sep-2019	12-Sep-2019		12-Sep-2019	12-Sep-2019		12-Sep-2019
Ammonium Soil by Titration	11-Sep-2019	11-Sep-2019	11-Sep-2019	11-Sep-2019	11-Sep-2019	11-Sep-2019	11-Sep-2019	10-Sep-2019	11-Sep-2019	11-Sep-2019
Anions by Kone (soil)	07-Sep-2019	05-Sep-2019	07-Sep-2019	07-Sep-2019	07-Sep-2019	07-Sep-2019	07-Sep-2019	07-Sep-2019	05-Sep-2019	07-Sep-2019
Asbestos ID in Solid Samples	02-Sep-2019	02-Sep-2019	04-Sep-2019	04-Sep-2019	30-Aug-2019	04-Sep-2019	30-Aug-2019	02-Sep-2019	04-Sep-2019	30-Aug-2019
CEN 10:1 Leachate (1 Stage)	07-Sep-2019	07-Sep-2019	12-Sep-2019	06-Sep-2019	05-Sep-2019		05-Sep-2019	05-Sep-2019		06-Sep-2019
CEN Readings	11-Sep-2019	11-Sep-2019	11-Sep-2019	09-Sep-2019	09-Sep-2019		09-Sep-2019	09-Sep-2019		09-Sep-2019
Cyanide Comp/Free/Total/Thiocyanate	12-Sep-2019	12-Sep-2019	12-Sep-2019	12-Sep-2019	11-Sep-2019	11-Sep-2019	11-Sep-2019	11-Sep-2019	11-Sep-2019	12-Sep-2019
Dissolved Metals by ICP-MS	14-Sep-2019	14-Sep-2019	13-Sep-2019	13-Sep-2019	14-Sep-2019		17-Sep-2019	14-Sep-2019		13-Sep-2019
EPH CWG (Aliphatic) Aqueous GC (W)	13-Sep-2019	13-Sep-2019	12-Sep-2019	12-Sep-2019	12-Sep-2019		13-Sep-2019	12-Sep-2019		13-Sep-2019
EPH CWG (Aliphatic) GC (S)	03-Sep-2019	11-Sep-2019	11-Sep-2019	11-Sep-2019	11-Sep-2019	11-Sep-2019	11-Sep-2019	11-Sep-2019	11-Sep-2019	03-Sep-2019
EPH CWG (Aromatic) Aqueous GC (W)	13-Sep-2019	13-Sep-2019	12-Sep-2019	12-Sep-2019	12-Sep-2019		13-Sep-2019	12-Sep-2019		13-Sep-2019
EPH CWG (Aromatic) GC (S)	03-Sep-2019	11-Sep-2019	11-Sep-2019	11-Sep-2019	11-Sep-2019	11-Sep-2019	11-Sep-2019	11-Sep-2019	11-Sep-2019	03-Sep-2019
GRO by GC-FID (S)	11-Sep-2019	12-Sep-2019	12-Sep-2019	12-Sep-2019	12-Sep-2019	12-Sep-2019	12-Sep-2019	12-Sep-2019	12-Sep-2019	11-Sep-2019
GRO by GC-FID (W)	11-Sep-2019	11-Sep-2019	11-Sep-2019	10-Sep-2019	10-Sep-2019		10-Sep-2019	10-Sep-2019		10-Sep-2019
Mercury Dissolved	12-Sep-2019	12-Sep-2019	12-Sep-2019	10-Sep-2019	10-Sep-2019		10-Sep-2019	10-Sep-2019		10-Sep-2019
Metals in solid samples by OES	09-Sep-2019	06-Sep-2019	09-Sep-2019	10-Sep-2019	10-Sep-2019	10-Sep-2019	09-Sep-2019	09-Sep-2019	09-Sep-2019	09-Sep-2019
PAH by GCMS	11-Sep-2019	10-Sep-2019	12-Sep-2019	12-Sep-2019	12-Sep-2019	12-Sep-2019	12-Sep-2019	12-Sep-2019	12-Sep-2019	03-Sep-2019
PAH Spec MS - Aqueous (W)	12-Sep-2019	12-Sep-2019	12-Sep-2019	12-Sep-2019	12-Sep-2019		12-Sep-2019	12-Sep-2019		12-Sep-2019
pH	11-Sep-2019	11-Sep-2019	11-Sep-2019	11-Sep-2019	11-Sep-2019	12-Sep-2019	11-Sep-2019	11-Sep-2019	11-Sep-2019	11-Sep-2019
pH Value	12-Sep-2019	12-Sep-2019	12-Sep-2019	11-Sep-2019	11-Sep-2019		11-Sep-2019	11-Sep-2019		10-Sep-2019
Phenols by HPLC (S)	03-Sep-2019	11-Sep-2019	12-Sep-2019	12-Sep-2019	12-Sep-2019	12-Sep-2019	12-Sep-2019	12-Sep-2019	12-Sep-2019	03-Sep-2019
Phenols by HPLC (W)	12-Sep-2019	12-Sep-2019	12-Sep-2019	12-Sep-2019	12-Sep-2019		11-Sep-2019	11-Sep-2019		11-Sep-2019
Sample description	29-Aug-2019	29-Aug-2019	29-Aug-2019	29-Aug-2019	29-Aug-2019	29-Aug-2019	29-Aug-2019	29-Aug-2019	29-Aug-2019	28-Aug-2019
Total Organic Carbon	12-Sep-2019	12-Sep-2019	12-Sep-2019	11-Sep-2019	11-Sep-2019	12-Sep-2019	11-Sep-2019	11-Sep-2019	12-Sep-2019	12-Sep-2019
Total Sulphate	09-Sep-2019	09-Sep-2019	09-Sep-2019	06-Sep-2019	09-Sep-2019	05-Sep-2019	09-Sep-2019	09-Sep-2019	09-Sep-2019	06-Sep-2019
Total Sulphur	05-Sep-2019	04-Sep-2019	06-Sep-2019	04-Sep-2019	04-Sep-2019	05-Sep-2019	05-Sep-2019	04-Sep-2019	05-Sep-2019	05-Sep-2019
TPH CWG (W)	13-Sep-2019	13-Sep-2019	12-Sep-2019	12-Sep-2019	12-Sep-2019		13-Sep-2019	12-Sep-2019		13-Sep-2019
TPH CWG GC (S)	11-Sep-2019	12-Sep-2019	12-Sep-2019	12-Sep-2019	12-Sep-2019	12-Sep-2019	12-Sep-2019	12-Sep-2019	12-Sep-2019	11-Sep-2019
VOC MS (S)	11-Sep-2019	10-Sep-2019	11-Sep-2019	11-Sep-2019	11-Sep-2019	11-Sep-2019	10-Sep-2019	11-Sep-2019	11-Sep-2019	11-Sep-2019

Validated

CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

Lab Sample No(s)	20598778	20598625	20598767	20598871
Customer Sample Ref.	WSBP108	WSBP109	WSBP109	WSBP109
AGS Ref.				
Depth	3.40 - 4.00	0.30 - 0.30	1.00 - 1.00	1.60 - 1.60
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
Ammonium Low	12-Sep-2019	12-Sep-2019	12-Sep-2019	
Ammonium Soil by Titration	10-Sep-2019	11-Sep-2019	10-Sep-2019	10-Sep-2019
Anions by Kone (soil)	05-Sep-2019	04-Sep-2019	03-Sep-2019	07-Sep-2019
Asbestos ID in Solid Samples	05-Sep-2019	30-Aug-2019	30-Aug-2019	04-Sep-2019
CEN 10:1 Leachate (1 Stage)	05-Sep-2019	12-Sep-2019	05-Sep-2019	
CEN Readings	09-Sep-2019	11-Sep-2019	09-Sep-2019	
Cyanide Comp/Free/Total/Thiocyanate	10-Sep-2019	12-Sep-2019	09-Sep-2019	02-Sep-2019
Dissolved Metals by ICP-MS	17-Sep-2019	14-Sep-2019	14-Sep-2019	
EPH CWG (Aliphatic) Aqueous GC (W)	12-Sep-2019	12-Sep-2019	12-Sep-2019	
EPH CWG (Aliphatic) GC (S)	03-Sep-2019	03-Sep-2019	03-Sep-2019	03-Sep-2019
EPH CWG (Aromatic) Aqueous GC (W)	12-Sep-2019	12-Sep-2019	12-Sep-2019	
EPH CWG (Aromatic) GC (S)	03-Sep-2019	03-Sep-2019	03-Sep-2019	03-Sep-2019
GRO by GC-FID (S)	11-Sep-2019	12-Sep-2019	12-Sep-2019	12-Sep-2019
GRO by GC-FID (W)	10-Sep-2019	11-Sep-2019	10-Sep-2019	
Mercury Dissolved	10-Sep-2019	12-Sep-2019	10-Sep-2019	
Metals in solid samples by OES	09-Sep-2019	09-Sep-2019	06-Sep-2019	10-Sep-2019
PAH by GCMS	04-Sep-2019	09-Sep-2019	12-Sep-2019	04-Sep-2019
PAH Spec MS - Aqueous (W)	12-Sep-2019	12-Sep-2019	11-Sep-2019	
pH	11-Sep-2019	11-Sep-2019	11-Sep-2019	11-Sep-2019
pH Value	10-Sep-2019	12-Sep-2019	12-Sep-2019	
Phenols by HPLC (S)	07-Sep-2019	05-Sep-2019	11-Sep-2019	09-Sep-2019
Phenols by HPLC (W)	12-Sep-2019	13-Sep-2019	11-Sep-2019	
Sample description	28-Aug-2019	29-Aug-2019	29-Aug-2019	28-Aug-2019
Total Organic Carbon	11-Sep-2019	11-Sep-2019	12-Sep-2019	12-Sep-2019
Total Sulphate	06-Sep-2019	06-Sep-2019	09-Sep-2019	09-Sep-2019
Total Sulphur	05-Sep-2019	06-Sep-2019	04-Sep-2019	05-Sep-2019
TPH CWG (W)	12-Sep-2019	12-Sep-2019	12-Sep-2019	
TPH CWG GC (S)	11-Sep-2019	12-Sep-2019	12-Sep-2019	12-Sep-2019
VOC MS (S)	11-Sep-2019	12-Sep-2019	11-Sep-2019	12-Sep-2019

Appendix General

1. Results are expressed on a dry weight basis (dried at 35ºC) for all soil analyses except for the following: NRA and CEN Leach tests, flash point LOI, pH, ammonium as NH4 by the BRE method, VOC TICs and SVOC TICs.

2. If sufficient sample is received a sub sample will be retained free of charge for 30 days after analysis is completed (e-mailed) for all sample types unless the sample is destroyed on testing. The prepared soil sub sample that is analysed for asbestos will be retained for a period of 6 months after the analysis date. All bulk samples will be retained for a period of 6 months after the analysis date. All samples received and not scheduled will be disposed of one month after the date of receipt unless we are instructed to the contrary. Once the initial period has expired, a storage charge will be applied for each month or part thereof until the client cancels the request for sample storage. ALS reserve the right to charge for samples received and stored but not analysed.

3. With respect to turnaround, we will always endeavour to meet client requirements wherever possible, but turnaround times cannot be absolutely guaranteed due to so many variables beyond our control.

4. We take responsibility for any test performed by sub-contractors (marked with an asterisk). We endeavour to use UKAS/MCERTS Accredited Laboratories, who either complete a quality questionnaire or are audited by ourselves. For some determinands there are no UKAS/MCERTS Accredited Laboratories, in this instance a laboratory with a known track record will be utilised.

5. If no separate volatile sample is supplied by the client, or if a headspace or sediment is present in the volatile sample, the integrity of the data may be compromised. This will be flagged up as an invalid VOC on the test schedule and the result marked as deviating on the test certificate.

6. NDP - No determination possible due to insufficient/unsuitable sample.

7. Results relate only to the items tested.

8. LoDs (Limit of Detection) for wet tests reported on a dry weight basis are not corrected for moisture content.

9. **Surrogate recoveries** - Surrogates are added to your sample to monitor recovery of the test requested. A % recovery is reported, results are not corrected for the recovery measured. Typical recoveries for organics tests are 70-130%. Recoveries in soils are affected by organic rich or clay rich matrices. Waters can be affected by remediation fluids or high amounts of sediment. Test results are only ever reported if all of the associated quality checks pass; it is assumed that all recoveries outside of the values above are due to matrix affect.

10. Stones/debris are not routinely removed. We always endeavour to take a representative sub sample from the received sample.

11. In certain circumstances the method detection limit may be elevated due to the sample being outside the calibration range. Other factors that may contribute to this include possible interferences. In both cases the sample would be diluted which would cause the method detection limit to be raised.

12. Mercury results quoted on soils will not include volatile mercury as the analysis is performed on a dried and crushed sample.

13. For leachate preparations other than Zero Headspace Extraction (ZHE) volatile loss may occur.

14. For the BSEN 12457-3 two batch process to allow the cumulative release to be calculated, the volume of the leachate produced is measured and filtered for all tests. We therefore cannot carry out any unfiltered analysis. The tests affected include volatiles GCFID/GCMS and all subcontracted analysis.

15. Analysis and identification of specific compounds using GCFID is by retention time only, and we routinely calibrate and quantify for benzene, toluene, ethylbenzenes and xylenes (BTEX). For total volatiles in the C5-C12 range, the total area of the chromatogram is integrated and expressed as ug/kg or ug/l. Although this analysis is commonly used for the quantification of gasoline range organics (GRO), the system will also detect other compounds such as chlorinated solvents, and this may lead to a falsely high result with respect to hydrocarbons only. It is not possible to specifically identify these non-hydrocarbons, as standards are not routinely run for any other compounds, and for more definitive identification, volatiles by GCMS should be utilised.

16. We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample. Other coarse granular material such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

17. **Tentatively Identified Compounds (TICs)** are non-target peaks in VOC and SVOC analysis. All non-target peaks detected with a concentration above the LoD are subjected to a mass spectral library search. Non-target peaks with a library search confidence of >75% are reported based on the best mass spectral library match. When a non-target peak with a library search confidence of <75% is detected it is reported as "mixed hydrocarbons". Non-target compounds identified from the scan data are semi-quantified relative to one of the deuterated internal standards, under the same chromatographic conditions as the target compounds. This result is reported as a semi-quantitative value and reported as Tentatively Identified Compounds (TICs). TICs are outside the scope of UKAS accreditation and are not moisture corrected.

18. **Sample Deviations**

If a sample is classed as deviated then the associated results may be compromised.

1	**Container with Headspace provided for volatiles analysis**
2	**Incorrect container received**
3	**Deviation from method**
§	**Sampled on date not provided**
♦	**Sample holding time exceeded in laboratory**
@	**Sample holding time exceeded due to late arrival of instructions or samples**

19. **Asbestos**

When requested, the individual sub sample scheduled will be analysed in house for the presence of asbestos fibres and asbestos containing material by our documented in house method TM048 based on HSG 248 (2005), which is accredited to ISO17025. If a specific asbestos fibre type is not found this will be reported as "Not detected". If no asbestos fibre types are found all will be reported as "Not detected" and the sub sample analysed deemed to be clear of asbestos. If an asbestos fibre type is found it will be reported as detected (for each fibre type found). Testing can be carried out on asbestos positive samples, but, due to Health and Safety considerations, may be replaced by alternative tests or reported as No Determination Possible (NDP). The quantity of

Identification of Asbestos in Bulk Materials & Soils

The results for identification of asbestos in bulk materials are obtained from supplied bulk materials which have been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

The results for identification of asbestos in soils are obtained from a homogenised sub sample which has been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

Asbestos Type	Common Name
Chrysotile	White Asbestos
Amosite	Brown Asbestos
Crocidolite	Blue Asbestos
Fibrous Actinolite	-
Fibrous Anthophyllite	-
Fibrous Tremolite	-

Visual Estimation Of Fibre Content

Estimation of fibre content is not permitted as part of our UKAS accredited test other than: - Trace - Where only one or two asbestos fibres were identified.

Respirable Fibres

Respirable fibres are defined as fibres of <3 µm diameter, longer than 5 µm and with aspect ratios of at least 3:1 that can be inhaled into the lower regions of the lung and are generally acknowledged to be most important predictor of hazard and risk for cancers of the lung.
Standing Committee of Analysts, *The Quantification of Asbestos in Soil (2107).*

Further guidance on typical asbestos fibre content of manufactured products can be found in HSG 264.

The identification of asbestos containing materials and soils falls within our schedule of tests for which we hold UKAS accreditation, however opinions, interpretations and all other information contained in the report are outside the scope of UKAS accreditation.

Unit 7-8 Hawarden Business Park
Manor Road (off Manor Lane)
Hawarden
Deeside
CH5 3US
Tel: (01244) 528700
Fax: (01244) 528701
email: hawardencustomerservices@alsglobal.com
Website: www.alsenvironmental.co.uk

Atkins Global Ltd
Project Jonah site office
Llan Coed House
Suite 24
Coed Darcy
Llandarcy
SA10 6HJ

Attention: Scott Bowler

CERTIFICATE OF ANALYSIS

Date of report Generation:	23 September 2019
Customer:	Atkins Global Ltd
Sample Delivery Group (SDG):	190828-36
Your Reference:	
Location:	Llanwern
Report No:	522548

This report has been revised and directly supersedes 521395 in its entirety.

We received 64 samples on Wednesday August 28, 2019 and 64 of these samples were scheduled for analysis which was completed on Tuesday September 17, 2019. Accredited laboratory tests are defined within the report, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation.

Should this report require incorporation into client reports, it must be used in its entirety and not simply with the data sections alone.

Chemical testing (unless subcontracted) performed at ALS Life Sciences Ltd Hawarden (Method codes TM) or ALS Life Sciences Ltd Aberdeen (Method codes S).

All sample data is provided by the customer. The reported results relate to the sample supplied, and on the basis that this data is correct.
Incorrect sampling dates and/or sample information will affect the validity of results.
The customer is not permitted to reproduce this report except in full without the approval of the laboratory.

Approved By:

Sonia McWhan
Operations Manager

CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
20598637	BHCP105		0.30 - 0.30	20/08/2019
20598655	BHCP105		0.50 - 0.50	20/08/2019
20598666	BHCP105		1.00 - 1.00	20/08/2019
20598446	CPB5		4.00 - 4.00	22/08/2019
20598438	CPB5		7.80 - 7.80	22/08/2019
20598427	CPB5		8.70 - 8.70	22/08/2019
20598824	CPB7		2.70 - 2.70	21/08/2019
20598832	CPB7		4.70 - 4.70	21/08/2019
20598839	CPB7		6.60 - 6.60	21/08/2019
20598847	CPB9		3.50 - 3.50	19/08/2019
20598859	CPB9		6.50 - 6.50	19/08/2019
20598882	CPB9		7.60 - 7.60	19/08/2019
20598896	CPB9		8.60 - 8.60	19/08/2019
20598788	CPB11		3.50 - 3.50	20/08/2019
20598798	CPB11		5.50 - 5.50	20/08/2019
20598808	CPB11		9.50 - 9.50	20/08/2019
20598531	CPB13		10.10 - 10.10	22/08/2019
20598492	CPB13		2.20 - 2.20	22/08/2019
20598466	CPB13		4.20 - 4.20	22/08/2019
20598207	CPB18		0.30 - 0.30	21/08/2019
20598340	CPB18		0.50 - 0.50	21/08/2019
20598478	CPB18		1.90 - 1.90	21/08/2019
20598715	CPBP101		0.30 - 0.30	20/08/2019
20598729	CPBP101		1.00 - 1.00	20/08/2019
20598741	CPBP101		1.50 - 1.50	20/08/2019
20598911	CPBR3		3.40 - 3.40	20/08/2019
20598922	CPBR3		4.80 - 4.80	20/08/2019
20598930	CPBR3		7.40 - 7.40	20/08/2019
20598817	CPBR3		9.10 - 9.10	20/08/2019
20598217	CPBR4		2.50 - 2.50	21/08/2019
20598227	CPBR4		3.50 - 3.50	21/08/2019
20598239	CPBR4		7.50 - 7.50	21/08/2019
20598248	CPBR4		9.40 - 9.40	21/08/2019
20598939	CPBR9		3.10 - 3.10	21/08/2019
20598946	CPBR9		4.20 - 4.20	21/08/2019
20598956	CPBR9		8.80 - 8.80	21/08/2019
20598388	WS01		0.30 - 0.30	22/08/2019
20598407	WS01		0.50 - 0.50	22/08/2019
20598417	WS01		1.80 - 1.80	22/08/2019
20598362	WS04		0.30 - 0.30	22/08/2019
20598372	WS04		1.00 - 1.00	22/08/2019
20598505	WS04		3.40 - 3.80	22/08/2019
20598264	WS13		0.30 - 0.30	22/08/2019
20598278	WS13		0.50 - 0.50	22/08/2019
20598286	WS13		1.00 - 1.00	22/08/2019
20598295	WS13		1.80 - 1.80	22/08/2019
20598310	WS19		0.30 - 0.30	22/08/2019
20598327	WS19		1.00 - 1.00	22/08/2019
20598351	WS19		1.80 - 1.80	22/08/2019
20598518	WS20		1.80 - 1.80	22/08/2019
20598585	WSBP104		0.30 - 0.30	20/08/2019
20598597	WSBP104		1.00 - 1.00	20/08/2019
20598613	WSBP104		1.80 - 1.80	20/08/2019
20598682	WSBP105		0.30 - 0.30	20/08/2019
20598696	WSBP105		1.00 - 1.00	20/08/2019
20598707	WSBP105		1.40 - 1.40	20/08/2019
20598541	WSBP108		0.30 - 0.30	20/08/2019

CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

20598552	WSBP108	1.00 - 1.00	20/08/2019
20598565	WSBP108	1.50 - 1.50	20/08/2019
20598757	WSBP108	2.10 - 2.50	20/08/2019
20598778	WSBP108	3.40 - 4.00	20/08/2019
20598625	WSBP109	0.30 - 0.30	21/08/2019
20598767	WSBP109	1.00 - 1.00	21/08/2019
20598871	WSBP109	1.60 - 1.60	21/08/2019

Maximum Sample/Coolbox Temperature (°C) : **14.6**

ISO5667-3 Water quality - Sampling - Part3 -

During Transportation samples shall be stored in a cooling device capable of maintaining a temperature of (5±3)°C.

ALS have data which show that a cool box with 4 frozen icepacks is capable of maintaining pre-chilled samples at a temperature of (5±3)°C for a period of up to 24hrs.

Only received samples which have had analysis scheduled will be shown on the following pages.

Validated

CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

Results Legend

X Test

N No Determination Possible

Sample Types -
S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

			Lab Sample No(s)	20598637			20598655			20598666			20598446			20598438			20598427			20598824
			Customer Sample Reference	BHCP105			BHCP105			BHCP105			CPB5			CPB5			CPB5			CPB7
			AGS Reference																			
			Depth (m)	0.30 - 0.30			0.50 - 0.50			1.00 - 1.00			4.00 - 4.00			7.80 - 7.80			8.70 - 8.70			2.70 - 2.70
			Container	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB
			Sample Type	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
Ammonium Low	All	NDPs: 0 Tests: 54		X			X			X			X			X			X			X
Ammonium Soil by Titration	All	NDPs: 0 Tests: 64			X			X			X			X			X			X		
Anions by Kone (soil)	All	NDPs: 3 Tests: 61			X			X			X			X			X			X		
Asbestos ID in Solid Samples	All	NDPs: 1 Tests: 63		X			X			X			X			X			X			X
CEN Readings	All	NDPs: 0 Tests: 54		X			X			X			X			X			X			X
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 118		X	X		X	X		X	X		X	X		X	X		X	X		X
Dissolved Metals by ICP-MS	All	NDPs: 0 Tests: 54		X			X			X			X			X			X			X
EPH CWG (Aliphatic) Aqueous GC (W)	All	NDPs: 0 Tests: 54		X			X			X			X			X			X			X
EPH CWG (Aliphatic) GC (S)	All	NDPs: 0 Tests: 64			X			X			X			X			X			X		
EPH CWG (Aromatic) Aqueous GC (W)	All	NDPs: 0 Tests: 54		X			X			X			X			X			X			X
EPH CWG (Aromatic) GC (S)	All	NDPs: 0 Tests: 64			X			X			X			X			X			X		
GRO by GC-FID (S)	All	NDPs: 1 Tests: 63				X			X			X			X			X			X		
GRO by GC-FID (W)	All	NDPs: 0 Tests: 54		X			X			X			X			X			X			X
Mercury Dissolved	All	NDPs: 0 Tests: 54		X			X			X			X			X			X			X
Metals in solid samples by OES	All	NDPs: 1 Tests: 63			X			X			X			X			X			X		

20598788	CPB11		3.50 - 3.50	1kg TUB	S	X				X	X	X	X	X		X			X	X	
20598896	CPB9		8.60 - 8.60	60g VOC (ALE215)	S													X			
				250g Amber Jar (ALE210)	S		X		X			X			X		X				X
				1kg TUB	S	X				X	X	X	X	X		X			X	X	
20598882	CPB9		7.60 - 7.60	60g VOC (ALE215)	S													X			
				250g Amber Jar (ALE210)	S		X		X			X			X		X				X
				1kg TUB	S	X				X	X	X	X	X		X			X	X	
20598859	CPB9		6.50 - 6.50	60g VOC (ALE215)	S													X			
				250g Amber Jar (ALE210)	S		X	N				X			X		X				X
				1kg TUB	S	X				X	X	X	X	X		X			X	X	
20598847	CPB9		3.50 - 3.50	60g VOC (ALE215)	S													X			
				250g Amber Jar (ALE210)	S		X	N				X			X		X				X
				1kg TUB	S	X				X	X	X	X	X		X			X	X	
20598839	CPB7		6.60 - 6.60	60g VOC (ALE215)	S													X			
				250g Amber Jar (ALE210)	S		X		X			X			X		X				X
				1kg TUB	S	X				X	X	X	X	X		X			X	X	
20598832	CPB7		4.70 - 4.70	60g VOC (ALE215)	S													X			
				250g Amber Jar (ALE210)	S		X		X			X			X		X				X
				1kg TUB	S	X				X	X	X	X	X		X			X	X	
20598824	CPB7		2.70 - 2.70	60g VOC (ALE215)	S													X			
				250g Amber Jar (ALE210)	S		X		X			X			X		X				X

CERTIFICATE OF ANALYSIS

Validated

SDG:	190828-36	Client Reference:		Report Number:	522548
Location:	Llanwern	Order Number:	LLA654	Superseded Report:	521395

Results Legend

- X Test
- N No Determination Possible

Sample Types -

- S - Soil/Solid
- UNS - Unspecified Solid
- GW - Ground Water
- SW - Surface Water
- LE - Land Leachate
- PL - Prepared Leachate
- PR - Process Water
- SA - Saline Water
- TE - Trade Effluent
- TS - Treated Sewage
- US - Untreated Sewage
- RE - Recreational Water
- DW - Drinking Water Non-regulatory
- UNL - Unspecified Liquid
- SL - Sludge
- G - Gas
- OTH - Other

Lab Sample No(s)			20598637			20598655			20598666			20598446			20598438			20598427			20598824
Customer Sample Reference			BHCP105			BHCP105			BHCP105			CPB5			CPB5			CPB5			CPB7
AGS Reference																					
Depth (m)			0.30 - 0.30			0.50 - 0.50			1.00 - 1.00			4.00 - 4.00			7.80 - 7.80			8.70 - 8.70			2.70 - 2.70
Container			1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB
Sample Type			S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
PAH by GCMS	All	NDPs: 0 Tests: 64		X			X			X			X			X			X		
PAH Spec MS - Aqueous (W)	All	NDPs: 0 Tests: 54	X			X			X			X			X			X			X
pH	All	NDPs: 0 Tests: 64		X			X			X			X			X			X		
pH Value	All	NDPs: 0 Tests: 54	X			X			X			X			X			X			X
Phenols by HPLC (S)	All	NDPs: 0 Tests: 64		X			X			X			X			X			X		
Phenols by HPLC (W)	All	NDPs: 0 Tests: 54	X			X			X			X			X			X			X
Sample description	All	NDPs: 0 Tests: 64		X			X			X			X			X			X		
Total Organic Carbon	All	NDPs: 1 Tests: 63		X			X			X			X			X			X		
Total Sulphate	All	NDPs: 1 Tests: 63		X			X			X			X			X			X		
Total Sulphur	All	NDPs: 1 Tests: 63		X			X			X			X			X			X		
TPH CWG (W)	All	NDPs: 0 Tests: 54	X			X			X			X			X			X			X
TPH CWG GC (S)	All	NDPs: 1 Tests: 63		X			X			X			X			X			X		
VOC MS (S)	All	NDPs: 1 Tests: 63			X			X			X			X			X			X	

20598788	CPB11		3.50 - 3.50	1kg TUB	S		X		X		X					X		
20598896	CPB9		8.60 - 8.60	60g VOC (ALE215)	S													X
				250g Amber Jar (ALE210)	S	X		X		X		X	X	X	X		X	
				1kg TUB	S		X		X		X					X		
20598882	CPB9		7.60 - 7.60	60g VOC (ALE215)	S													X
				250g Amber Jar (ALE210)	S	X		X		X		X	X	X	X		X	
				1kg TUB	S		X		X		X					X		
20598859	CPB9		6.50 - 6.50	60g VOC (ALE215)	S													X
				250g Amber Jar (ALE210)	S	X		X		X		X	X	X	X		X	
				1kg TUB	S		X		X		X					X		
20598847	CPB9		3.50 - 3.50	60g VOC (ALE215)	S													X
				250g Amber Jar (ALE210)	S	X		X		X		X	X	X	X		X	
				1kg TUB	S		X		X		X					X		
20598839	CPB7		6.60 - 6.60	60g VOC (ALE215)	S													X
				250g Amber Jar (ALE210)	S	X		X		X		X	X	X	X		X	
				1kg TUB	S		X		X		X					X		
20598832	CPB7		4.70 - 4.70	60g VOC (ALE215)	S													X
				250g Amber Jar (ALE210)	S	X		X		X		X	X	X	X		X	
				1kg TUB	S		X		X		X					X		
20598824	CPB7		2.70 - 2.70	60g VOC (ALE215)	S													X
				250g Amber Jar (ALE210)	S	X		X		X		X	X	X	X		X	

Validated

CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

Results Legend

X Test

N No Determination Possible

Sample Types -

S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

Lab Sample No(s)			20598788		20598798			20598808			20598531			20598492			20598466			20598207
Customer Sample Reference			CPB11		CPB11			CPB11			CPB13			CPB13			CPB13			CPB18
AGS Reference																				
Depth (m)			3.50 - 3.50		5.50 - 5.50			9.50 - 9.50			10.10 - 10.10			2.20 - 2.20			4.20 - 4.20			0.30 - 0.30
Container			250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)
Sample Type			S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
Ammonium Low	All	NDPs: 0 Tests: 54			X			X			X			X			X			X	
Ammonium Soil by Titration	All	NDPs: 0 Tests: 64	X			X			X			X			X			X			X
Anions by Kone (soil)	All	NDPs: 3 Tests: 61	X			X			X			X			X			X			X
Asbestos ID in Solid Samples	All	NDPs: 1 Tests: 63			X			X			X			X			X			X	
Asbestos Quantification - Full	All	NDPs: 1 Tests: 3																			
CEN Readings	All	NDPs: 0 Tests: 54			X			X			X			X			X			X	
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 118	X		X	X		X	X		X	X		X	X		X	X		X	X
Dissolved Metals by ICP-MS	All	NDPs: 0 Tests: 54			X			X			X			X			X			X	
EPH CWG (Aliphatic) Aqueous GC (W)	All	NDPs: 0 Tests: 54			X			X			X			X			X			X	
EPH CWG (Aliphatic) GC (S)	All	NDPs: 0 Tests: 64	X			X			X			X			X			X			X
EPH CWG (Aromatic) Aqueous GC (W)	All	NDPs: 0 Tests: 54			X			X			X			X			X			X	
EPH CWG (Aromatic) GC (S)	All	NDPs: 0 Tests: 64	X			X			X			X			X			X			X
GRO by GC-FID (S)	All	NDPs: 1 Tests: 63		X			X			X			X			X			X		
GRO by GC-FID (W)	All	NDPs: 0 Tests: 54			X			X			X			X			X			X	
Mercury Dissolved	All	NDPs: 0 Tests: 54			X			X			X			X			X			X	

20598922	CPBR3		4.80 - 4.80	250g Amber Jar (ALE210)	S			x		x					x				x			x			
				1kg TUB	S		x				x			x	x	x	x			x				x	x
20598911	CPBR3		3.40 - 3.40	60g VOC (ALE215)	S																		x		
				250g Amber Jar (ALE210)	S			x		x					x				x			x			
				1kg TUB	S		x				x			x	x	x	x			x				x	x
20598741	CPBP101		1.50 - 1.50	60g VOC (ALE215)	S																		x		
				250g Amber Jar (ALE210)	S			x		x					x				x			x			
				1kg TUB	S		x				x			x	x	x	x			x				x	x
20598729	CPBP101		1.00 - 1.00	60g VOC (ALE215)	S																		x		
				250g Amber Jar (ALE210)	S			x		x					x				x			x			
				1kg TUB	S		x				x	x		x	x	x	x			x				x	x
20598715	CPBP101		0.30 - 0.30	60g VOC (ALE215)	S																		x		
				250g Amber Jar (ALE210)	S			x		x					x				x			x			
				1kg TUB	S		x				x			x	x	x	x			x				x	x
20598478	CPB18		1.90 - 1.90	60g VOC (ALE215)	S																		x		
				250g Amber Jar (ALE210)	S			x		x					x				x			x			
				1kg TUB	S						x	x													
20598340	CPB18		0.50 - 0.50	60g VOC (ALE215)	S																		x		
				250g Amber Jar (ALE210)	S			x		x					x				x			x			
				1kg TUB	S		x				x			x	x	x	x			x				x	x
20598207	CPB18		0.30 - 0.30	60g VOC (ALE215)	S																		x		

Validated

CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

Results Legend

X Test

N No Determination Possible

Sample Types -

S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

Lab Sample No(s)			20598788		20598798			20598808			20598531			20598492			20598466			20598207
Customer Sample Reference			CPB11		CPB11			CPB11			CPB13			CPB13			CPB13			CPB18
AGS Reference																				
Depth (m)			3.50 - 3.50		5.50 - 5.50			9.50 - 9.50			10.10 - 10.10			2.20 - 2.20			4.20 - 4.20			0.30 - 0.30
Container			250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)
Sample Type			S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
Metals in solid samples by OES	All	NDPs: 1 Tests: 63	X			X			X			X			X			X			X
PAH by GCMS	All	NDPs: 0 Tests: 64	X			X			X			X			X			X			X
PAH Spec MS - Aqueous (W)	All	NDPs: 0 Tests: 54			X			X			X			X			X			X	
pH	All	NDPs: 0 Tests: 64	X			X			X			X			X			X			X
pH Value	All	NDPs: 0 Tests: 54			X			X			X			X			X			X	
Phenols by HPLC (S)	All	NDPs: 0 Tests: 64	X			X			X			X			X			X			X
Phenols by HPLC (W)	All	NDPs: 0 Tests: 54			X			X			X			X			X			X	
Sample description	All	NDPs: 0 Tests: 64	X			X			X			X			X			X			X
Total Organic Carbon	All	NDPs: 1 Tests: 63	X			X			X			X			X			X			X
Total Sulphate	All	NDPs: 1 Tests: 63	X			X			X			X			X			X			X
Total Sulphur	All	NDPs: 1 Tests: 63	X			X			X			X			X			X			X
TPH CWG (W)	All	NDPs: 0 Tests: 54			X			X			X			X			X			X	
TPH CWG GC (S)	All	NDPs: 1 Tests: 63	X			X			X			X			X			X			X
VOC MS (S)	All	NDPs: 1 Tests: 63		X			X			X			X			X			X		

20598922	CPBR3		4.80 - 4.80	250g Amber Jar (ALE210)	S	X	X		X		X		X	X	X	X		X				
				1kg TUB	S			X		X		X					X					
20598911	CPBR3		3.40 - 3.40	60g VOC (ALE215)	S																	X
				250g Amber Jar (ALE210)	S	X	X		X		X		X	X	X	X		X				
				1kg TUB	S			X		X		X					X					
20598741	CPBP101		1.50 - 1.50	60g VOC (ALE215)	S																	X
				250g Amber Jar (ALE210)	S	X	X		X		X		X	X	X	X		X				
				1kg TUB	S			X		X		X					X					
20598729	CPBP101		1.00 - 1.00	60g VOC (ALE215)	S																	X
				250g Amber Jar (ALE210)	S	X	X		X		X		X	X	X	X		X				
				1kg TUB	S			X		X		X					X					
20598715	CPBP101		0.30 - 0.30	60g VOC (ALE215)	S																	X
				250g Amber Jar (ALE210)	S	X	X		X		X		X	X	X	X		X				
				1kg TUB	S			X		X		X					X					
20598478	CPB18		1.90 - 1.90	60g VOC (ALE215)	S																	X
				250g Amber Jar (ALE210)	S	X	X		X		X		X	X	X	X		X				
				1kg TUB	S																	
20598340	CPB18		0.50 - 0.50	60g VOC (ALE215)	S																	X
				250g Amber Jar (ALE210)	S	X	X		X		X		X	X	X	X		X				
				1kg TUB	S			X		X		X					X					
20598207	CPB18		0.30 - 0.30	60g VOC (ALE215)	S																	X

Validated

CERTIFICATE OF ANALYSIS

SDG: 190828-36 **Client Reference:** **Report Number:** 522548
Location: Llanwern **Order Number:** LLA654 **Superseded Report:** 521395

Results Legend

X Test

N No Determination Possible

Sample Types -

S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

			Lab Sample No(s)	20598922	20598930			20598817			20598217			20598227			20598239			20598248		
			Customer Sample Reference	CPBR3	CPBR3			CPBR3			CPBR4			CPBR4			CPBR4			CPBR4		
			AGS Reference																			
			Depth (m)	4.80 - 4.80	7.40 - 7.40			9.10 - 9.10			2.50 - 2.50			3.50 - 3.50			7.50 - 7.50			9.40 - 9.40		
			Container	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)
			Sample Type	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
Ammonium Low	All	NDPs: 0 Tests: 54			X			X			X			X			X					
Ammonium Soil by Titration	All	NDPs: 0 Tests: 64				X			X			X			X			X			X	
Anions by Kone (soil)	All	NDPs: 3 Tests: 61				X			X			X			X			X			X	
Asbestos ID in Solid Samples	All	NDPs: 1 Tests: 63			X			X			X			X			X			X		
Asbestos Quantification - Full	All	NDPs: 1 Tests: 3																				
CEN Readings	All	NDPs: 0 Tests: 54			X			X			X			X			X					
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 118			X	X		X	X		X	X		X	X		X	X			X	
Dissolved Metals by ICP-MS	All	NDPs: 0 Tests: 54			X			X			X			X			X					
EPH CWG (Aliphatic) Aqueous GC (W)	All	NDPs: 0 Tests: 54			X			X			X			X			X					
EPH CWG (Aliphatic) GC (S)	All	NDPs: 0 Tests: 64				X			X			X			X			X			X	
EPH CWG (Aromatic) Aqueous GC (W)	All	NDPs: 0 Tests: 54			X			X			X			X			X					
EPH CWG (Aromatic) GC (S)	All	NDPs: 0 Tests: 64				X			X			X			X			X			X	
GRO by GC-FID (S)	All	NDPs: 1 Tests: 63	X				X			X			X			X			X				X
GRO by GC-FID (W)	All	NDPs: 0 Tests: 54			X			X			X			X			X					
Mercury Dissolved	All	NDPs: 0 Tests: 54			X			X			X			X			X					

20598362	WS04		0.30 - 0.30	60g VOC (ALE215)	S																										X				
				250g Amber Jar (ALE210)	S				X		X								X						X				X						
				1kg TUB	S		X						X		X		X		X		X		X				X						X		X
20598417	WS01		1.80 - 1.80	60g VOC (ALE215)	S																									N					
				250g Amber Jar (ALE210)	S				X	N									X						X				X						
				1kg TUB	S							N		N																					
20598407	WS01		0.50 - 0.50	60g VOC (ALE215)	S																										X				
				250g Amber Jar (ALE210)	S				X		X								X						X				X						
				1kg TUB	S		X						X				X		X		X		X				X						X		X
20598388	WS01		0.30 - 0.30	60g VOC (ALE215)	S																										X				
				250g Amber Jar (ALE210)	S				X		X								X						X				X						
				1kg TUB	S		X						X				X		X		X		X				X						X		X
20598956	CPBR9		8.80 - 8.80	60g VOC (ALE215)	S																										X				
				250g Amber Jar (ALE210)	S				X		X								X						X				X						
				1kg TUB	S		X						X				X		X		X		X				X						X		X
20598946	CPBR9		4.20 - 4.20	60g VOC (ALE215)	S																										X				
				250g Amber Jar (ALE210)	S				X		X								X						X				X						
				1kg TUB	S		X						X				X		X		X		X				X						X		X
20598939	CPBR9		3.10 - 3.10	60g VOC (ALE215)	S																										X				
				250g Amber Jar (ALE210)	S				X		X								X						X				X						
				1kg TUB	S		X						X				X		X		X		X				X						X		X

Validated

CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

Results Legend

X Test

N No Determination Possible

Sample Types -

S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

Lab Sample No(s)			20598922	20598930			20598817			20598217			20598227			20598239			20598248		
Customer Sample Reference			CPBR3	CPBR3			CPBR3			CPBR4			CPBR4			CPBR4			CPBR4		
AGS Reference																					
Depth (m)			4.80 - 4.80	7.40 - 7.40			9.10 - 9.10			2.50 - 2.50			3.50 - 3.50			7.50 - 7.50			9.40 - 9.40		
Container			60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)
Sample Type			S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
Metals in solid samples by OES	All	NDPs: 1 Tests: 63			X			X			X			X			X			X		
PAH by GCMS	All	NDPs: 0 Tests: 64			X			X			X			X			X			X		
PAH Spec MS - Aqueous (W)	All	NDPs: 0 Tests: 54		X			X			X			X			X						
pH	All	NDPs: 0 Tests: 64			X			X			X			X			X			X		
pH Value	All	NDPs: 0 Tests: 54		X			X			X			X			X						
Phenols by HPLC (S)	All	NDPs: 0 Tests: 64			X			X			X			X			X			X		
Phenols by HPLC (W)	All	NDPs: 0 Tests: 54		X			X			X			X			X						
Sample description	All	NDPs: 0 Tests: 64			X			X			X			X			X			X		
Total Organic Carbon	All	NDPs: 1 Tests: 63			X			X			X			X			X			X		
Total Sulphate	All	NDPs: 1 Tests: 63			X			X			X			X			X			X		
Total Sulphur	All	NDPs: 1 Tests: 63			X			X			X			X			X			X		
TPH CWG (W)	All	NDPs: 0 Tests: 54		X			X			X			X			X						
TPH CWG GC (S)	All	NDPs: 1 Tests: 63			X			X			X			X			X			X		
VOC MS (S)	All	NDPs: 1 Tests: 63	X			X			X			X			X			X				X

20598362	WS04		0.30 - 0.30	60g VOC (ALE215)	S																		X
				250g Amber Jar (ALE210)	S		X		X			X			X			X		X			X	
				1kg TUB	S					X			X			X						X		
20598417	WS01		1.80 - 1.80	60g VOC (ALE215)	S																		N	
				250g Amber Jar (ALE210)	S	N			X			X			X			X	N		N		N			
				1kg TUB	S																			
20598407	WS01		0.50 - 0.50	60g VOC (ALE215)	S																		X
				250g Amber Jar (ALE210)	S		X		X			X			X			X		X			X	
				1kg TUB	S					X			X			X						X		
20598388	WS01		0.30 - 0.30	60g VOC (ALE215)	S																		X
				250g Amber Jar (ALE210)	S		X		X			X			X			X		X			X	
				1kg TUB	S					X			X			X						X		
20598956	CPBR9		8.80 - 8.80	60g VOC (ALE215)	S																		X
				250g Amber Jar (ALE210)	S		X		X			X			X			X		X			X	
				1kg TUB	S					X			X			X						X		
20598946	CPBR9		4.20 - 4.20	60g VOC (ALE215)	S																		X
				250g Amber Jar (ALE210)	S		X		X			X			X			X		X			X	
				1kg TUB	S					X			X			X						X		
20598939	CPBR9		3.10 - 3.10	60g VOC (ALE215)	S																		X
				250g Amber Jar (ALE210)	S		X		X			X			X			X		X			X	
				1kg TUB	S					X			X			X						X		

Validated

CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

Results Legend

X Test

N No Determination Possible

Sample Types -

S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

Lab Sample No(s)			20598372			20598505			20598264			20598278			20598286			20598295		20598310
Customer Sample Reference			WS04			WS04			WS13			WS13			WS13			WS13		WS19
AGS Reference																				
Depth (m)			1.00 - 1.00			3.40 - 3.80			0.30 - 0.30			0.50 - 0.50			1.00 - 1.00			1.80 - 1.80		0.30 - 0.30
Container			1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB
Sample Type			S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
Ammonium Low	All	NDPs: 0 Tests: 54	X			X			X			X									X
Ammonium Soil by Titration	All	NDPs: 0 Tests: 64		X			X			X			X			X			X		
Anions by Kone (soil)	All	NDPs: 3 Tests: 61		X			X			X			X			X			X		
Asbestos ID in Solid Samples	All	NDPs: 1 Tests: 63	X			X			X			X			X			X			X
CEN Readings	All	NDPs: 0 Tests: 54	X			X			X			X									X
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 118	X	X		X	X		X	X		X	X			X			X		X
Dissolved Metals by ICP-MS	All	NDPs: 0 Tests: 54	X			X			X			X									X
EPH CWG (Aliphatic) Aqueous GC (W)	All	NDPs: 0 Tests: 54	X			X			X			X									X
EPH CWG (Aliphatic) GC (S)	All	NDPs: 0 Tests: 64		X			X			X			X			X			X		
EPH CWG (Aromatic) Aqueous GC (W)	All	NDPs: 0 Tests: 54	X			X			X			X									X
EPH CWG (Aromatic) GC (S)	All	NDPs: 0 Tests: 64		X			X			X			X			X			X		
GRO by GC-FID (S)	All	NDPs: 1 Tests: 63			X			X			X			X			X			X	
GRO by GC-FID (W)	All	NDPs: 0 Tests: 54	X			X			X			X									X
Mercury Dissolved	All	NDPs: 0 Tests: 54	X			X			X			X									X
Metals in solid samples by OES	All	NDPs: 1 Tests: 63		X			X			X			X			X			X		

20598682	WSBP105		0.30 - 0.30	1kg TUB	S	X			X	X	X	X	X		X			X	X	
20598613	WSBP104		1.80 - 1.80	60g VOC (ALE215)	S												X			
				250g Amber Jar (ALE210)	S		X	X			X			X		X				X
				1kg TUB	S	X			X	X	X	X	X		X			X	X	
20598597	WSBP104		1.00 - 1.00	60g VOC (ALE215)	S												X			
				250g Amber Jar (ALE210)	S		X	X			X			X		X				X
				1kg TUB	S	X			X	X	X	X	X		X			X	X	
20598585	WSBP104		0.30 - 0.30	60g VOC (ALE215)	S												X			
				250g Amber Jar (ALE210)	S		X	X			X			X		X				X
				1kg TUB	S	X			X	X	X	X	X		X			X	X	
20598518	WS20		1.80 - 1.80	60g VOC (ALE215)	S												X			
				250g Amber Jar (ALE210)	S		X	X			X			X		X				X
				1kg TUB	S				X											
20598351	WS19		1.80 - 1.80	60g VOC (ALE215)	S												X			
				250g Amber Jar (ALE210)	S		X	X			X			X		X				X
				1kg TUB	S				X											
20598327	WS19		1.00 - 1.00	60g VOC (ALE215)	S												X			
				250g Amber Jar (ALE210)	S		X	X			X			X		X				X
				1kg TUB	S	X			X	X	X	X	X		X			X	X	
20598310	WS19		0.30 - 0.30	60g VOC (ALE215)	S												X			
				250g Amber Jar (ALE210)	S		X	X			X			X		X				X

Validated

CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**	
Location:	Llanwern	**Order Number:**	LLA654
Report Number:	522548	**Superseded Report:**	521395

Results Legend

X Test

N No Determination Possible

Sample Types -
S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

Lab Sample No(s)			20598372			20598505			20598264			20598278			20598286			20598295			20598310
Customer Sample Reference			WS04			WS04			WS13			WS13			WS13			WS13			WS19
AGS Reference																					
Depth (m)			1.00 - 1.00			3.40 - 3.80			0.30 - 0.30			0.50 - 0.50			1.00 - 1.00			1.80 - 1.80			0.30 - 0.30
Container			1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB
Sample Type			S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
PAH by GCMS	All	NDPs: 0 Tests: 64		X			X			X			X			X			X		
PAH Spec MS - Aqueous (W)	All	NDPs: 0 Tests: 54	X			X			X			X									X
pH	All	NDPs: 0 Tests: 64		X			X			X			X			X			X		
pH Value	All	NDPs: 0 Tests: 54	X			X			X			X									X
Phenols by HPLC (S)	All	NDPs: 0 Tests: 64		X			X			X			X			X			X		
Phenols by HPLC (W)	All	NDPs: 0 Tests: 54	X			X			X			X									X
Sample description	All	NDPs: 0 Tests: 64		X			X			X			X			X			X		
Total Organic Carbon	All	NDPs: 1 Tests: 63		X			X			X			X			X			X		
Total Sulphate	All	NDPs: 1 Tests: 63		X			X			X			X			X			X		
Total Sulphur	All	NDPs: 1 Tests: 63		X			X			X			X			X			X		
TPH CWG (W)	All	NDPs: 0 Tests: 54	X			X			X			X									X
TPH CWG GC (S)	All	NDPs: 1 Tests: 63		X			X			X			X			X			X		
VOC MS (S)	All	NDPs: 1 Tests: 63			X			X			X			X			X			X	

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20598682	WSBP105		0.30 - 0.30	1kg TUB	S		x		x		x						x		
20598613	WSBP104		1.80 - 1.80	60g VOC (ALE215)	S														x
				250g Amber Jar (ALE210)	S	x		x		x		x	x	x	x		x		
				1kg TUB	S		x		x		x						x		
20598597	WSBP104		1.00 - 1.00	60g VOC (ALE215)	S														x
				250g Amber Jar (ALE210)	S	x		x		x		x	x	x	x		x		
				1kg TUB	S		x		x		x						x		
20598585	WSBP104		0.30 - 0.30	60g VOC (ALE215)	S														x
				250g Amber Jar (ALE210)	S	x		x		x		x	x	x	x		x		
				1kg TUB	S		x		x		x						x		
20598518	WS20		1.80 - 1.80	60g VOC (ALE215)	S														x
				250g Amber Jar (ALE210)	S	x		x		x		x	x	x	x		x		
				1kg TUB	S														
20598351	WS19		1.80 - 1.80	60g VOC (ALE215)	S														x
				250g Amber Jar (ALE210)	S	x		x		x		x	x	x	x		x		
				1kg TUB	S														
20598327	WS19		1.00 - 1.00	60g VOC (ALE215)	S														x
				250g Amber Jar (ALE210)	S	x		x		x		x	x	x	x		x		
				1kg TUB	S		x		x		x						x		
20598310	WS19		0.30 - 0.30	60g VOC (ALE215)	S														x
				250g Amber Jar (ALE210)	S	x		x		x		x	x	x	x		x		

Validated

CERTIFICATE OF ANALYSIS

SDG: 190828-36 **Client Reference:** **Report Number:** 522548
Location: Llanwern **Order Number:** LLA654 **Superseded Report:** 521395

Results Legend

X Test

N No Determination Possible

Sample Types -
S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

			Lab Sample No(s)	Customer Sample Reference	AGS Reference	Depth (m)	Container	Sample Type
			20598682	WSBP105		0.30 - 0.30	250g Amber Jar (ALE210)	S
							60g VOC (ALE215)	S
			20598696	WSBP105		1.00 - 1.00	1kg TUB	S
							250g Amber Jar (ALE210)	S
							60g VOC (ALE215)	S
			20598707	WSBP105		1.40 - 1.40	1kg TUB	S
							250g Amber Jar (ALE210)	S
							60g VOC (ALE215)	S
			20598541	WSBP108		0.30 - 0.30	1kg TUB	S
							250g Amber Jar (ALE210)	S
							60g VOC (ALE215)	S
			20598552	WSBP108		1.00 - 1.00	1kg TUB	S
							250g Amber Jar (ALE210)	S
							60g VOC (ALE215)	S
			20598565	WSBP108		1.50 - 1.50	1kg TUB	S
							250g Amber Jar (ALE210)	S
							60g VOC (ALE215)	S
			20598757	WSBP108		2.10 - 2.50	1kg TUB	S
							250g Amber Jar (ALE210)	S
Ammonium Low	All	NDPs: 0 Tests: 54						
				X				
				X				
				X				
Ammonium Soil by Titration	All	NDPs: 0 Tests: 64						
			X					
				X				
				X				
				X				
Anions by Kone (soil)	All	NDPs: 3 Tests: 61						
			X					
				X				
				X				
				X				
Asbestos ID in Solid Samples	All	NDPs: 1 Tests: 63						
				X				
						X		
				X				
				X				
CEN Readings	All	NDPs: 0 Tests: 54						
				X				
				X				
				X				
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 118						
			X					
				X				
				X				
				X				
				X				
Dissolved Metals by ICP-MS	All	NDPs: 0 Tests: 54						
				X				
				X				
				X				
EPH CWG (Aliphatic) Aqueous GC (W)	All	NDPs: 0 Tests: 54						
				X				
				X				
				X				
EPH CWG (Aliphatic) GC (S)	All	NDPs: 0 Tests: 64						
			X					
				X				
				X				
				X				
EPH CWG (Aromatic) Aqueous GC (W)	All	NDPs: 0 Tests: 54						
				X				
				X				
				X				
EPH CWG (Aromatic) GC (S)	All	NDPs: 0 Tests: 64						
			X					
				X				
				X				
				X				
GRO by GC-FID (S)	All	NDPs: 1 Tests: 63						
				X				
						X		
				X				
				X				
GRO by GC-FID (W)	All	NDPs: 0 Tests: 54						
				X				
				X				
				X				
Mercury Dissolved	All	NDPs: 0 Tests: 54						
				X				
				X				
				X				
Metals in solid samples by OES	All	NDPs: 1 Tests: 63						
			X					
				X				
				X				
				X				

20598871	WSBP109		1.60 - 1.60	60g VOC (ALE215)	S														x			
				250g Amber Jar (ALE210)	S		x		x				x				x							x
				1kg TUB	S						x													
20598767	WSBP109		1.00 - 1.00	60g VOC (ALE215)	S														x			
				250g Amber Jar (ALE210)	S		x		x				x				x							x
				1kg TUB	S	x				x		x		x		x					x		x	
20598625	WSBP109		0.30 - 0.30	60g VOC (ALE215)	S														x			
				250g Amber Jar (ALE210)	S		x		x				x				x							x
				1kg TUB	S	x				x		x		x		x					x		x	
20598778	WSBP108		3.40 - 4.00	60g VOC (ALE215)	S														x			
				250g Amber Jar (ALE210)	S		x		x				x				x							x
				1kg TUB	S	x				x		x		x		x					x		x	
20598757	WSBP108		2.10 - 2.50	60g VOC (ALE215)	S														x			

Validated

CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

Results Legend

X Test

N No Determination Possible

Sample Types -

S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

Lab Sample No(s)			20598682		20598696			20598707			20598541			20598552			20598565			20598757	
Customer Sample Reference			WSBP105		WSBP105			WSBP105			WSBP108			WSBP108			WSBP108			WSBP108	
AGS Reference																					
Depth (m)			0.30 - 0.30		1.00 - 1.00			1.40 - 1.40			0.30 - 0.30			1.00 - 1.00			1.50 - 1.50			2.10 - 2.50	
Container			250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)
Sample Type			S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
PAH by GCMS	All	NDPs: 0 Tests: 64	X			X			X			X			X			X			X	
PAH Spec MS - Aqueous (W)	All	NDPs: 0 Tests: 54			X						X			X						X	
pH	All	NDPs: 0 Tests: 64	X			X			X			X			X			X			X	
pH Value	All	NDPs: 0 Tests: 54			X						X			X						X	
Phenols by HPLC (S)	All	NDPs: 0 Tests: 64	X			X			X			X			X			X			X	
Phenols by HPLC (W)	All	NDPs: 0 Tests: 54			X						X			X						X	
Sample description	All	NDPs: 0 Tests: 64	X			X			X			X			X			X			X	
Total Organic Carbon	All	NDPs: 1 Tests: 63	X			X			X			X			X			X			X	
Total Sulphate	All	NDPs: 1 Tests: 63	X			X			X			X			X			X			X	
Total Sulphur	All	NDPs: 1 Tests: 63	X			X			X			X			X			X			X	
TPH CWG (W)	All	NDPs: 0 Tests: 54			X						X			X						X	
TPH CWG GC (S)	All	NDPs: 1 Tests: 63	X			X			X			X			X			X			X	
VOC MS (S)	All	NDPs: 1 Tests: 63		X			X			X			X			X			X			

20598871	WSBP109		1.60 - 1.60	60g VOC (ALE215)	S																X
				250g Amber Jar (ALE210)	S	X		X		X		X	X	X	X		X			
				1kg TUB	S																
20598767	WSBP109		1.00 - 1.00	60g VOC (ALE215)	S																X
				250g Amber Jar (ALE210)	S	X		X		X		X	X	X	X		X			
				1kg TUB	S		X		X		X						X				
20598625	WSBP109		0.30 - 0.30	60g VOC (ALE215)	S																X
				250g Amber Jar (ALE210)	S	X		X		X		X	X	X	X		X			
				1kg TUB	S		X		X		X						X				
20598778	WSBP108		3.40 - 4.00	60g VOC (ALE215)	S																X
				250g Amber Jar (ALE210)	S	X		X		X		X	X	X	X		X			
				1kg TUB	S		X		X		X						X				
20598757	WSBP108		2.10 - 2.50	60g VOC (ALE215)	S																X

CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

Sample Descriptions

Grain Sizes

very fine	<0.063mm	fine	0.063mm - 0.1mm	medium	0.1mm - 2mm	coarse	2mm - 10mm	very coarse	>10mm

Lab Sample No(s)	Customer Sample Ref.	Depth (m)	Colour	Description	Inclusions	Inclusions 2
20598637	BHCP105	0.30 - 0.30	Dark Brown	Loamy Sand	Stones	Crushed Brick
20598655	BHCP105	0.50 - 0.50	Dark Brown	Loamy Sand	Stones	Vegetation
20598666	BHCP105	1.00 - 1.00	Dark Brown	Loamy Sand	Stones	Vegetation
20598427	CPB5	8.70 - 8.70	Grey	Loamy Sand	Stones	Vegetation
20598438	CPB5	7.80 - 7.80	Black	Clay Loam	None	None
20598446	CPB5	4.00 - 4.00	Dark Brown	Sandy Silt Loam	Vegetation	None
20598824	CPB7	2.70 - 2.70	Dark Brown	Silt Loam	Stones	Vegetation
20598832	CPB7	4.70 - 4.70	Grey	Clay Loam	Stones	None
20598839	CPB7	6.60 - 6.60	Dark Brown	Sandy Silt Loam	Vegetation	Stones
20598847	CPB9	3.50 - 3.50	Dark Brown	Silty Clay	Vegetation	None
20598859	CPB9	6.50 - 6.50	Dark Brown	Loamy Sand	Vegetation	None
20598882	CPB9	7.60 - 7.60	Dark Brown	Silty Clay	None	None
20598896	CPB9	8.60 - 8.60	Grey	Loamy Sand	Stones	Concrete/Aggregate
20598788	CPB11	3.50 - 3.50	Black	Clay Loam	Stones	None
20598798	CPB11	5.50 - 5.50	Dark Brown	Clay Loam	None	None
20598808	CPB11	9.50 - 9.50	Grey	Sand	Stones	None
20598466	CPB13	4.20 - 4.20	Grey	Silt Loam	None	None
20598492	CPB13	2.20 - 2.20	Dark Brown	Silt Loam	Vegetation	None
20598531	CPB13	10.10 - 10.10	Dark Brown	Sandy Clay	Stones	None
20598207	CPB18	0.30 - 0.30	Dark Brown	Loamy Sand	Stones	None
20598340	CPB18	0.50 - 0.50	Black	Loamy Sand	Stones	Vegetation
20598478	CPB18	1.90 - 1.90	Dark Brown	Silty Clay Loam	Stones	Crushed Brick
20598715	CPBP101	0.30 - 0.30	Dark Brown	Loamy Sand	Stones	Vegetation
20598729	CPBP101	1.00 - 1.00	Dark Brown	Loamy Sand	Stones	Oil/Petroleum
20598741	CPBP101	1.50 - 1.50	Dark Brown	Loamy Sand	Stones	Oil/Petroleum
20598817	CPBR3	9.10 - 9.10	Light Brown	Sandy Loam	Stones	Vegetation
20598911	CPBR3	3.40 - 3.40	Dark Brown	Sandy Silt Loam	Vegetation	None
20598922	CPBR3	4.80 - 4.80	Dark Brown	Sandy Silt Loam	None	None
20598930	CPBR3	7.40 - 7.40	Dark Brown	Silt Loam	Vegetation	None
20598217	CPBR4	2.50 - 2.50	Dark Brown	Silt Loam	Vegetation	None
20598227	CPBR4	3.50 - 3.50	Dark Brown	Silt Loam	Vegetation	None
20598239	CPBR4	7.50 - 7.50	Black	Silt Loam	None	Vegetation
20598248	CPBR4	9.40 - 9.40	Dark Brown	Sand	None	None
20598939	CPBR9	3.10 - 3.10	Dark Brown	Sandy Silt Loam	Vegetation	None
20598946	CPBR9	4.20 - 4.20	Grey	Silt Loam	Vegetation	Stones
20598956	CPBR9	8.80 - 8.80	Dark Brown	Sand	Stones	None
20598388	WS01	0.30 - 0.30	Black	Loamy Sand	Stones	None
20598407	WS01	0.50 - 0.50	Black	Loamy Sand	Stones	None

CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

			Colour	Description	Inclusions	Inclusions 2
20598417	WS01	1.80 - 1.80	Black	N/A	Tar	Stones
20598362	WS04	0.30 - 0.30	Dark Brown	Silt Loam	Stones	None
20598372	WS04	1.00 - 1.00	Dark Brown	Sandy Silt Loam	Stones	None
20598505	WS04	3.40 - 3.80	Black	Silty Clay	None	None
20598264	WS13	0.30 - 0.30	Dark Brown	Sandy Loam	Stones	Vegetation
20598278	WS13	0.50 - 0.50	Dark Brown	Loamy Sand	Stones	Vegetation
20598286	WS13	1.00 - 1.00	Dark Brown	Stone/Soil	Stones	None
20598295	WS13	1.80 - 1.80	Dark Brown	Loamy Sand	Stones	Vegetation
20598310	WS19	0.30 - 0.30	Dark Brown	Sandy Silt Loam	Stones	Vegetation
20598327	WS19	1.00 - 1.00	Dark Brown	Sandy Silt Loam	Vegetation	Stones
20598351	WS19	1.80 - 1.80	Dark Brown	Sandy Silt Loam	Stones	Vegetation
20598518	WS20	1.80 - 1.80	Dark Brown	Clay	None	None
20598585	WSBP104	0.30 - 0.30	Dark Brown	Loamy Sand	Stones	Vegetation
20598597	WSBP104	1.00 - 1.00	Dark Brown	Stone/Soil	Stones	None
20598613	WSBP104	1.80 - 1.80	Dark Brown	Silt Loam	Vegetation	Oil/Petroleum
20598682	WSBP105	0.30 - 0.30	Dark Brown	Stone/Soil	Stones	None
20598696	WSBP105	1.00 - 1.00	Dark Brown	Stone/Soil	Stones	Vegetation
20598707	WSBP105	1.40 - 1.40	Dark Brown	Stone/Soil	Stones	None
20598541	WSBP108	0.30 - 0.30	Dark Brown	Loamy Sand	Stones	Vegetation
20598552	WSBP108	1.00 - 1.00	Dark Brown	Stone/Soil	Stones	None
20598565	WSBP108	1.50 - 1.50	Dark Brown	Silt Loam	Stones	Vegetation
20598757	WSBP108	2.10 - 2.50	Grey	Clay	None	None
20598778	WSBP108	3.40 - 4.00	Dark Brown	Loamy Sand	Vegetation	None
20598625	WSBP109	0.30 - 0.30	Dark Brown	Loamy Sand	Stones	Crushed Brick
20598767	WSBP109	1.00 - 1.00	Dark Brown	Stone/Soil	Crushed Brick	Oil/Petroleum
20598871	WSBP109	1.60 - 1.60	Grey	Clay Loam	Vegetation	Stones

These descriptions are only intended to act as a cross check if sample identities are questioned, and to provide a log of sample matrices with respect to MCERTS validation. They are not intended as full geological descriptions.

We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally ocurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample.

Other coarse granular materials such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

Validated

CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-3+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	BHCP105	BHCP105	BHCP105	CPB5	CPB5	CPB5
			Depth (m)	0.30 - 0.30	0.50 - 0.50	1.00 - 1.00	4.00 - 4.00	7.80 - 7.80	8.70 - 8.70
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	20/08/2019	20/08/2019	20/08/2019	22/08/2019	22/08/2019	22/08/2019
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	28/08/2019	28/08/2019	28/08/2019	28/08/2019	28/08/2019	28/08/2019
			SDG Ref	190828-36	190828-36	190828-36	190828-36	190828-36	190828-36
			Lab Sample No.(s)	20598637	20598655	20598666	20598446	20598438	20598427
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		8.9	11	8.1	36	54	10
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	<12 M	<12 M	<12 M	<12 M	<12 M
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 @ M	<0.01 @ M	<0.01 @ M	<0.01 M	<0.01 @ M	<0.01 M
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 @ M	<0.01 @ M	<0.01 @ M	<0.01 M	<0.01 @ M	<0.01 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 @ M	<0.015 @ M	<0.015 @ M	<0.015 M	<0.015 @ M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 @ M	<0.035 @ M	<0.035 @ M	<0.035 M	<0.035 @ M	<0.035 M
Sulphur, Total	<0.02 %	TM132		0.401	0.116	0.165	0.181	1.09	0.286
Sulphate, Total potential	<0.06 %	TM132		1.2	0.348	0.495	0.543	3.27	0.858
Soil Organic Matter (SOM)	<0.35 %	TM132		3.17 #	7.86 #	2.93 #	1.68 #	11.3 #	<0.35 #
pH	1 pH Units	TM133		9.75 M	9.57 M	9.67 M	7.97 M	7.37 M	8.41 M
Cyanide, Total	<1 mg/kg	TM153		<1 M	<1 M	<1 M	<1 M	<1 M	<1 M
Cyanide, Free	<1 mg/kg	TM153		<1 M	<1 M	<1 M	<1 M	<1 M	<1 M
Arsenic	<0.6 mg/kg	TM181		7.02 M	23.7 M	16 M	8.95 M	8.6 M	9.9 M
Cadmium	<0.02 mg/kg	TM181		0.619 M	<0.2 M	<0.2 M	<0.02 M	<0.02 M	0.0244 M
Chromium	<0.9 mg/kg	TM181		<9 M	<9 M	<9 M	20.6 M	15.6 M	1.94 M
Copper	<1.4 mg/kg	TM181		<14 M	65.5 M	45.3 M	9.29 M	9.76 M	2.89 M
Iron	<1000 mg/kg	TM181		86700 #	365000 #	253000 #	23200 #	25000 #	6840 #
Lead	<0.7 mg/kg	TM181		37 M	207 M	196 M	14.2 M	10.3 M	2.55 M
Manganese	<0.13 mg/kg	TM181		4430 M	9460 M	6530 M	637 M	403 M	416 M
Mercury	<0.14 mg/kg	TM181		<1.4 M	<1.4 M	<1.4 M	<0.14 M	<0.14 M	<0.14 M
Nickel	<0.2 mg/kg	TM181		13.9 M	10.6 M	13 M	26.2 M	21.2 M	4.5 M
Selenium	<1 mg/kg	TM181		<10 #	<10 #	<10 #	<1 #	<1 #	<1 #
Vanadium	<0.2 mg/kg	TM181		46 #	28.5 #	38.7 #	32.6 #	25.4 #	9.22 #
Zinc	<1.9 mg/kg	TM181		145 M	419 M	426 M	83.6 M	68.3 M	19.1 M
Sulphate, acid soluble (total)	<0.02 %	TM221		0.926	0.0704	0.235	0.047	0.17	0.1
Water Soluble Sulphate as SO4 2:1 Extract	<0.004 g/l	TM243		0.391 M	0.156 M	0.234 M	0.068 M	0.31 M	0.0403 M
Soluble Sulphate 2:1 extract as SO4 BRE	<0.004 g/l	TM243		0.391 M	0.156 M	0.234 M	0.068 M	0.31 M	0.0403 M

Validated

CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-3+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	CPB7	CPB7	CPB7	CPB9	CPB9	CPB9
			Depth (m)	2.70 - 2.70	4.70 - 4.70	6.60 - 6.60	3.50 - 3.50	6.50 - 6.50	7.60 - 7.60
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	21/08/2019	21/08/2019	21/08/2019	19/08/2019	19/08/2019	19/08/2019
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	28/08/2019	28/08/2019	28/08/2019	28/08/2019	28/08/2019	28/08/2019
			SDG Ref	190828-36	190828-36	190828-36	190828-36	190828-36	190828-36
			Lab Sample No.(s)	20598824	20598832	20598839	20598847	20598859	20598882
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		46	32	61	34	63	33
Exchangeable Ammonia as N	<12 mg/kg	TM024		171 M	463 M	350 M	85.8 M	90.3 M	56.1 M
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 @ M	<0.01 M	<0.01 @ M	<0.01 @ M	<0.01 @ M	<0.01 @ M
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 @ M	<0.01 M	<0.01 @ M	<0.01 @ M	<0.01 @ M	<0.01 @ M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 @ M	<0.015 M	0.286 @ M	<0.015 @ M	<0.015 @ M	<0.015 @ M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 @ M	<0.035 M	0.286 @ M	<0.035 @ M	<0.035 @ M	<0.035 @ M
Sulphur, Total	<0.02 %	TM132		1.34	1.12	2.89	0.273	2.55	0.781
Sulphate, Total potential	<0.06 %	TM132		4.02	3.36	8.67	0.819	7.65	2.34
Soil Organic Matter (SOM)	<0.35 %	TM132		20.3 #	2.31 #	20.5 #	5.47 #	33.8 #	3.33 #
pH	1 pH Units	TM133		8.5 M	8.39 M	7.5 M	8.99 M	6.82 M	7.98 M
Cyanide, Total	<1 mg/kg	TM153		1.58 M	<1 M	<1 M	3.07 @ M	<1 @ M	<1 M
Cyanide, Free	<1 mg/kg	TM153		<1 M	<1 M	<1 M	<1 @ M	<1 @ M	<1 M
Arsenic	<0.6 mg/kg	TM181		6.67 M	7.77 M	8.21 M	8.69 M	9.18 M	8.76 M
Cadmium	<0.02 mg/kg	TM181		0.454 M	<0.02 M	<0.02 M	<0.02 M	<0.02 M	<0.02 M
Chromium	<0.9 mg/kg	TM181		4.91 M	23.9 M	14.9 M	40.1 M	14.1 M	18.3 M
Copper	<1.4 mg/kg	TM181		9.28 M	10.3 M	17.9 M	28.8 M	15.1 M	9.56 M
Iron	<1000 mg/kg	TM181		31400 #	31000 #	24900 #	20800 #	19200 #	20100 #
Lead	<0.7 mg/kg	TM181		30.6 M	19.8 M	26 M	21.2 M	6.34 M	12.8 M
Manganese	<0.13 mg/kg	TM181		1290 M	1900 M	613 M	172 M	320 M	549 M
Mercury	<0.14 mg/kg	TM181		<0.14 M	<0.14 M	<0.14 M	<0.14 M	<0.14 M	<0.14 M
Nickel	<0.2 mg/kg	TM181		7.39 M	30.6 M	18.8 M	19.2 M	17.9 M	23.6 M
Selenium	<1 mg/kg	TM181		<1 #	<1 #	<1 #	1.03 #	1.92 #	<1 #
Vanadium	<0.2 mg/kg	TM181		17.9 #	36 #	34.3 #	61.4 #	24.1 #	28.6 #
Zinc	<1.9 mg/kg	TM181		335 M	112 M	82 M	47.1 M	39.6 M	72.8 M
Sulphate, acid soluble (total)	<0.02 %	TM221		0.593	0.139	0.545	0.0804	0.391	0.0953
Water Soluble Sulphate as SO4 2:1 Extract	<0.004 g/l	TM243		1.11 M	0.555 M	2.48 M			0.131 M
Soluble Sulphate 2:1 extract as SO4 BRE	<0.004 g/l	TM243		1.11 M	0.555 M	2.48 M			0.131 M

Validated

CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-3+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	CPB9	CPB11	CPB11	CPB11	CPB13	CPB13
			Depth (m)	8.60 - 8.60	3.50 - 3.50	5.50 - 5.50	9.50 - 9.50	10.10 - 10.10	2.20 - 2.20
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	19/08/2019	20/08/2019	20/08/2019	20/08/2019	22/08/2019	22/08/2019
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	28/08/2019	28/08/2019	28/08/2019	28/08/2019	28/08/2019	28/08/2019
			SDG Ref	190828-36	190828-36	190828-36	190828-36	190828-36	190828-36
			Lab Sample No.(s)	20598896	20598788	20598798	20598808	20598531	20598492
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		13	57	34	6.2	14	33
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	<12 M	38 M	<12 M	<12 M	39.6 M
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 @ M	<0.01 @ M	<0.01 M	<0.01 @ M	<0.01 M	<0.01 M
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 @ M	<0.01 @ M	<0.01 M	<0.01 @ M	<0.01 M	<0.01 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 @ M	<0.015 @ M	<0.015 M	<0.015 @ M	<0.015 M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 @ M	<0.035 @ M	<0.035 M	<0.035 @ M	<0.035 M	<0.035 M
Sulphur, Total	<0.02 %	TM132		0.104	1.4	0.371	0.0756	0.0552	1.2
Sulphate, Total potential	<0.06 %	TM132		0.312	4.2	1.11	0.227	0.166	3.6
Soil Organic Matter (SOM)	<0.35 %	TM132		<0.35 #	20 #	1.86 #	<0.35 #	0.712 #	2.59 #
pH	1 pH Units	TM133		8.99 M	8 M	8.63 M	8.2 M	8.17 M	7.91 M
Cyanide, Total	<1 mg/kg	TM153		<1 @ M	2.53 M	<1 M	<1 M	<1 M	<1 M
Cyanide, Free	<1 mg/kg	TM153		<1 @ M	<1 M	<1 M	<1 M	<1 M	<1 M
Arsenic	<0.6 mg/kg	TM181		6.29 M	9.03 M	9.37 M	8.75 M	6.05 M	9.57 M
Cadmium	<0.02 mg/kg	TM181		0.0257 M	<0.02 M	0.2 M	<0.02 M	0.254 M	<0.02 M
Chromium	<0.9 mg/kg	TM181		1.38 M	27.9 M	19.9 M	3.39 M	15.3 M	24.6 M
Copper	<1.4 mg/kg	TM181		<1.4 M	22.8 M	8.69 M	27.5 M	9.87 M	11 M
Iron	<1000 mg/kg	TM181		6210 #	20100 #	24200 #	6520 #	34200 #	19100 #
Lead	<0.7 mg/kg	TM181		2.43 M	15.3 M	12.5 M	1.42 M	16.3 M	18.3 M
Manganese	<0.13 mg/kg	TM181		297 M	223 M	522 M	783 M	804 M	684 M
Mercury	<0.14 mg/kg	TM181		<0.14 M	<0.14 M	<0.14 M	<0.14 M	<0.14 M	<0.14 M
Nickel	<0.2 mg/kg	TM181		3.6 M	17.9 M	24.5 M	3.79 M	24.5 M	31.6 M
Selenium	<1 mg/kg	TM181		<1 #	1.53 #	<1 #	<1 #	<1 #	<1 #
Vanadium	<0.2 mg/kg	TM181		6.54 #	44.8 #	31 #	5.35 #	21.5 #	36.2 #
Zinc	<1.9 mg/kg	TM181		16.7 M	48.4 M	75.5 M	9.89 M	71.4 M	98.7 M
Sulphate, acid soluble (total)	<0.02 %	TM221		0.079	0.157	0.0936	0.0359	0.0332	0.103
Water Soluble Sulphate as SO4 2:1 Extract	<0.004 g/l	TM243		0.0639 M	0.609 M	0.154 M	0.0184 M	0.0354 M	0.259 M
Soluble Sulphate 2:1 extract as SO4 BRE	<0.004 g/l	TM243		0.0639 M	0.609 M	0.154 M	0.0184 M	0.0354 M	0.259 M

Validated

CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-3+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	CPB13	CPB18	CPB18	CPB18	CPBP101	CPBP101
			Depth (m)	4.20 - 4.20	0.30 - 0.30	0.50 - 0.50	1.90 - 1.90	0.30 - 0.30	1.00 - 1.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	22/08/2019	21/08/2019	21/08/2019	21/08/2019	20/08/2019	20/08/2019
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	28/08/2019	28/08/2019	28/08/2019	28/08/2019	28/08/2019	28/08/2019
			SDG Ref	190828-36	190828-36	190828-36	190828-36	190828-36	190828-36
			Lab Sample No.(s)	20598466	20598207	20598340	20598478	20598715	20598729
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		34	18	20	25	5.9	9.3
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	<12 M	<12 M	59.6 M	<12 M	<12 M
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 M	0.0121 M	<0.01 M	<0.01 @ M	<0.01 @ M	0.022 @ M
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 M	0.0121 M	0.0125 M	<0.01 @ M	<0.01 @ M	0.033 @ M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M	<0.015 M	<0.015 @ M	<0.015 @ M	<0.015 @ M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 M	<0.035 M	<0.035 @ M	<0.035 @ M	0.055 @ M
Sulphur, Total	<0.02 %	TM132		1.57	0.506	0.487	0.234	0.724	0.619
Sulphate, Total potential	<0.06 %	TM132		4.71	1.52	1.46	0.702	2.17	1.86
Soil Organic Matter (SOM)	<0.35 %	TM132		2.1 #	39.1 #	76.9 #	10.8 #	7.6 #	8.76 #
pH	1 pH Units	TM133		8.35 M	10.1 M	8.91 M	8 M	11.4 M	12.1 M
Cyanide, Total	<1 mg/kg	TM153		<1 M	<1 M	<1 M	<1 M	<1 M	<1 M
Cyanide, Free	<1 mg/kg	TM153		<1 M	<1 M	<1 M	<1 M	<1 M	<1 M
Arsenic	<0.6 mg/kg	TM181		11.2 M	8.29 M	5.75 M	13 M	16.2 M	<6 M
Cadmium	<0.02 mg/kg	TM181		0.252 M	0.601 M	<0.02 M	1.37 M	<0.02 M	1.15 M
Chromium	<0.9 mg/kg	TM181		22.3 M	51.1 M	28.4 M	63 M	46.7 M	267 M
Copper	<1.4 mg/kg	TM181		10.1 M	10.3 M	11.5 M	20.4 M	7.67 M	14.4 M
Iron	<1000 mg/kg	TM181		32100 #	62400 #	34300 #	49400 #	58900 #	144000 #
Lead	<0.7 mg/kg	TM181		16.5 M	29.7 M	24.7 M	42.5 M	25.6 M	57.8 M
Manganese	<0.13 mg/kg	TM181		1180 M	7160 M	2400 M	6220 M	8860 M	21400 M
Mercury	<0.14 mg/kg	TM181		<0.14 M	<0.14 M	<0.14 M	<0.14 M	<0.14 M	<1.4 M
Nickel	<0.2 mg/kg	TM181		31.6 M	9.04 M	8.08 M	24.3 M	9.58 M	9.03 M
Selenium	<1 mg/kg	TM181		<1 #	2.75 #	1.17 #	2.26 #	3.06 #	<10 #
Vanadium	<0.2 mg/kg	TM181		34.7 #	60.4 #	35.4 #	92 #	140 #	317 #
Zinc	<1.9 mg/kg	TM181		96.5 M	104 M	71.8 M	119 M	124 M	132 M
Sulphate, acid soluble (total)	<0.02 %	TM221		0.0887	0.587	0.202	0.184	1.02	0.823
Water Soluble Sulphate as SO4 2:1 Extract	<0.004 g/l	TM243		0.26 M	0.289 M	0.227 M	0.357 M	0.636 M	0.147 M
Soluble Sulphate 2:1 extract as SO4 BRE	<0.004 g/l	TM243		0.26 M	0.289 M	0.227 M	0.357 M	0.636 M	0.147 M
Asbestos Quantification - Gravimetric - %	<0.001 %	TM304					<0.001 #		0.0016 #
Asbestos Quantification - PCOM Evaluation - %	<0.001 %	TM304					<0.001 #		<0.001 #
Additional Asbestos Components (Using TM048)		TM304					None #		None #
Analysts Comments		TM304					0		Fibres typical of Amph
Asbestos Quantification - Total - %	<0.001 %	TM304					<0.001 #		0.0022 #

Validated

CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-3+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	CPBP101	CPBR3	CPBR3	CPBR3	CPBR3	CPBR4
			Depth (m)	1.50 - 1.50	3.40 - 3.40	4.80 - 4.80	7.40 - 7.40	9.10 - 9.10	2.50 - 2.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	20/08/2019	20/08/2019	20/08/2019	20/08/2019	20/08/2019	21/08/2019
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	28/08/2019	28/08/2019	28/08/2019	28/08/2019	28/08/2019	28/08/2019
			SDG Ref	190828-36	190828-36	190828-36	190828-36	190828-36	190828-36
			Lab Sample No.(s)	20598741	20598911	20598922	20598930	20598817	20598217
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		6.7	54	69	57	11	41
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	<12 M	124 M	63.9 M	<12 M	540 M
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 @ M	<0.01 @ M	<0.01 @ M	<0.01 @ M	<0.01 @ M	<0.01 M
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 @ M	<0.01 @ M	<0.01 @ M	<0.01 @ M	<0.01 @ M	<0.01 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 @ M	<0.015 @ M	<0.015 @ M	<0.015 @ M	<0.015 @ M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 @ M	<0.035 @ M	<0.035 @ M	<0.035 @ M	<0.035 @ M	<0.035 M
Sulphur, Total	<0.02 %	TM132		0.224	1.11	2.46	1.44	0.0472	0.229
Sulphate, Total potential	<0.06 %	TM132		0.672	3.33	7.38	4.32	0.142	0.687
Soil Organic Matter (SOM)	<0.35 %	TM132		4.83 #	36 #	40.9 #	12.2 #	<0.35 #	11.1 #
pH	1 pH Units	TM133		12 M	8.41 M	8.34 M	6.31 M	8.7 M	7.15 M
Cyanide, Total	<1 mg/kg	TM153		<1 M	<1 @ M	<1 @ M	<1 @ M	<1 @ M	9.18 M
Cyanide, Free	<1 mg/kg	TM153		<1 M	<1 @ M	<1 @ M	<1 @ M	<1 @ M	<1 M
Arsenic	<0.6 mg/kg	TM181		<6 M	8 M	9.5 M	10.1 M	4.66 M	12.9 M
Cadmium	<0.02 mg/kg	TM181		1.59 M	<0.02 M	<0.02 M	<0.02 M	<0.02 M	<0.02 M
Chromium	<0.9 mg/kg	TM181		77.7 M	109 M	42.6 M	24.4 M	7.17 M	35.1 M
Copper	<1.4 mg/kg	TM181		14 M	13.6 M	17.3 M	10.1 M	7.7 M	14.3 M
Iron	<1000 mg/kg	TM181		180000 #	41800 #	22300 #	20100 #	14600 #	20300 #
Lead	<0.7 mg/kg	TM181		62.9 M	11.1 M	10.2 M	10.8 M	6.26 M	19.4 M
Manganese	<0.13 mg/kg	TM181		10700 M	8240 M	2040 M	1080 M	361 M	244 M
Mercury	<0.14 mg/kg	TM181		<1.4 M	<0.14 M	<0.14 M	<0.14 M	<0.14 M	<0.14 M
Nickel	<0.2 mg/kg	TM181		8.96 M	10.6 M	13.9 M	20.1 M	13.2 M	29.4 M
Selenium	<1 mg/kg	TM181		<10 #	4.49 #	2.17 #	<1 #	<1 #	<1 #
Vanadium	<0.2 mg/kg	TM181		145 #	161 #	68.3 #	40.6 #	12.9 #	49.9 #
Zinc	<1.9 mg/kg	TM181		138 M	37.1 M	36.5 M	63.4 M	35 M	60.8 M
Sulphate, acid soluble (total)	<0.02 %	TM221		0.317	0.335	0.342	0.351	0.021	0.113
Water Soluble Sulphate as SO4 2:1 Extract	<0.004 g/l	TM243		0.109 M	0.578 M	0.997 M	0.967 M	0.0203 M	0.115 M
Soluble Sulphate 2:1 extract as SO4 BRE	<0.004 g/l	TM243		0.109 M	0.578 M	0.997 M	0.967 M	0.0203 M	0.115 M

Validated

CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-3+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	CPBR4	CPBR4	CPBR4	CPBR9	CPBR9	CPBR9
			Depth (m)	3.50 - 3.50	7.50 - 7.50	9.40 - 9.40	3.10 - 3.10	4.20 - 4.20	8.80 - 8.80
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	21/08/2019	21/08/2019	21/08/2019	21/08/2019	21/08/2019	21/08/2019
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	28/08/2019	28/08/2019	28/08/2019	28/08/2019	28/08/2019	28/08/2019
			SDG Ref	190828-36	190828-36	190828-36	190828-36	190828-36	190828-36
			Lab Sample No.(s)	20598227	20598239	20598248	20598939	20598946	20598956
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		71	68	29	64	37	23
Exchangeable Ammonia as N	<12 mg/kg	TM024		199 M	42.3 M	<12 M	<12 M	34.7 M	<12 M
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 @ M	<0.01 @ M	<0.01 @ M	<0.01 @ M	<0.01 @ M
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 @ M	<0.01 @ M	<0.01 @ M	<0.01 @ M	<0.01 @ M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 @ M	<0.015 @ M	<0.015 @ M	<0.015 @ M	<0.015 @ M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 @ M	<0.035 @ M	<0.035 @ M	<0.035 @ M	<0.035 @ M
Sulphur, Total	<0.02 %	TM132		3.13	1.33	0.209	2.52	1.58	0.403
Sulphate, Total potential	<0.06 %	TM132		9.39	3.99	0.627	7.56	4.74	1.21
Soil Organic Matter (SOM)	<0.35 %	TM132		44.1 #	26.4 #	0.431 #	39.7 #	3.31 #	0.779 #
pH	1 pH Units	TM133		6.18 M	7.43 M	8.3 M	7.62 M	8.04 M	8.53 M
Cyanide, Total	<1 mg/kg	TM153		2.69 M	<1 @ M	<1 @ M	<1 @ M	<1 @ M	<1 @ M
Cyanide, Free	<1 mg/kg	TM153		<1 M	<1 @ M	<1 @ M	<1 @ M	<1 @ M	<1 @ M
Arsenic	<0.6 mg/kg	TM181		8.35 M	8.88 M	5.46 M	11.2 M	7.02 M	7.69 M
Cadmium	<0.02 mg/kg	TM181		<0.02 M	<0.02 M	<0.02 M	0.0398 M	<0.02 M	0.12 M
Chromium	<0.9 mg/kg	TM181		62.1 M	13.3 M	5.26 M	17.1 M	21.2 M	4.59 M
Copper	<1.4 mg/kg	TM181		20.3 M	11.8 M	3.28 M	19.7 M	8.65 M	2.9 M
Iron	<1000 mg/kg	TM181		25500 #	24300 #	9110 #	22300 #	22100 #	9680 #
Lead	<0.7 mg/kg	TM181		9.79 M	10.9 M	4.83 M	25.3 M	19.3 M	6.96 M
Manganese	<0.13 mg/kg	TM181		2830 M	503 M	258 M	321 M	412 M	257 M
Mercury	<0.14 mg/kg	TM181		<0.14 M	<0.14 M	<0.14 M	<0.14 M	<0.14 M	<0.14 M
Nickel	<0.2 mg/kg	TM181		19.5 M	18.7 M	8.34 M	18.3 M	33.8 M	6.67 M
Selenium	<1 mg/kg	TM181		4.29 #	<1 #	<1 #	1.72 #	<1 #	<1 #
Vanadium	<0.2 mg/kg	TM181		83.2 #	23.5 #	11.3 #	35.4 #	34.1 #	10.4 #
Zinc	<1.9 mg/kg	TM181		32.7 M	66.9 M	25.5 M	74.3 M	94.4 M	27.2 M
Sulphate, acid soluble (total)	<0.02 %	TM221		0.572	0.177	0.0615	0.451	0.109	0.122
Water Soluble Sulphate as SO4 2:1 Extract	<0.004 g/l	TM243		1.02 M	0.371 M	0.0407 M	0.799 M	0.333 M	0.0659 M
Soluble Sulphate 2:1 extract as SO4 BRE	<0.004 g/l	TM243		1.02 M	0.371 M	0.0407 M	0.799 M	0.333 M	0.0659 M

Validated

CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-3+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	WS01	WS01	WS01	WS04	WS04	WS04
			Depth (m)	0.30 - 0.30	0.50 - 0.50	1.80 - 1.80	0.30 - 0.30	1.00 - 1.00	3.40 - 3.80
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	22/08/2019	22/08/2019	22/08/2019	22/08/2019	22/08/2019	22/08/2019
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	28/08/2019	28/08/2019	28/08/2019	28/08/2019	28/08/2019	28/08/2019
			SDG Ref	190828-36	190828-36	190828-36	190828-36	190828-36	190828-36
			Lab Sample No.(s)	20598388	20598407	20598417	20598362	20598372	20598505
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		9.9	13	0	9.2	12	76
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	<12 M	<12	<12 M	261 M	170 M
Phenol	<0.01 mg/kg	TM062 (S)		0.0222 M	0.0115 M	<0.2	<0.01 M	0.0912 @ M	<0.01 M
Cresols	<0.01 mg/kg	TM062 (S)		0.0444 M	0.0345 M	0.66	<0.01 M	0.194 @ M	<0.01 M
Xylenols	<0.015 mg/kg	TM062 (S)		0.0222 M	0.023 M	1.16	<0.015 M	<0.075 @ M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		0.0888 M	0.069 M	1.82	<0.035 M	0.285 @ M	<0.035 M
Sulphur, Total	<0.02 %	TM132		0.405	0.379		0.286	0.278	3.12
Sulphate, Total potential	<0.06 %	TM132		1.22	1.14		0.858	0.834	9.36
Soil Organic Matter (SOM)	<0.35 %	TM132		37.2 #	46.9 #		5.38 #	5.9 #	57.6 #
pH	1 pH Units	TM133		11 M	11.4 M	7.39	10.6 M	9.21 M	6.81 M
Cyanide, Total	<1 mg/kg	TM153		11.7 M	3.88 M	<1	<1 M	297 M	<1 M
Cyanide, Free	<1 mg/kg	TM153		<1 M	<1 M	<1	<1 M	1.23 M	<1 M
Arsenic	<0.6 mg/kg	TM181		5.64 M	5.33 M		12.3 M	8.9 M	5.01 M
Cadmium	<0.02 mg/kg	TM181		<0.02 M	0.0365 M		<0.02 M	0.0486 M	<0.02 M
Chromium	<0.9 mg/kg	TM181		91.6 M	58.1 M		211 M	34.4 M	38.8 M
Copper	<1.4 mg/kg	TM181		9.59 M	11 M		31.4 M	21.6 M	12.2 M
Iron	<1000 mg/kg	TM181		63100 #	23000 #		76700 #	34900 #	16700 #
Lead	<0.7 mg/kg	TM181		12.8 M	22.2 M		60.9 M	39.6 M	5.17 M
Manganese	<0.13 mg/kg	TM181		8680 M	3000 M		11800 M	2680 M	2110 M
Mercury	<0.14 mg/kg	TM181		<0.14 M	<0.14 M		<0.14 M	<0.14 M	<0.14 M
Nickel	<0.2 mg/kg	TM181		7.58 M	10.1 M		17.1 M	20.4 M	13.7 M
Selenium	<1 mg/kg	TM181		3.36 #	1.93 #		4.92 #	<1 #	3.99 #
Vanadium	<0.2 mg/kg	TM181		165 #	62.7 #		139 #	55.9 #	57.6 #
Zinc	<1.9 mg/kg	TM181		55.6 M	108 M		230 M	181 M	23.5 M
Sulphate, acid soluble (total)	<0.02 %	TM221		0.525	0.241		0.383	0.216	0.365
Water Soluble Sulphate as SO4 2:1 Extract	<0.004 g/l	TM243		0.0914 M	0.152 M		0.218 M	0.219 M	0.508 M
Soluble Sulphate 2:1 extract as SO4 BRE	<0.004 g/l	TM243		0.0914 M	0.152 M		0.218 M	0.219 M	0.508 M
Asbestos Quantification - Gravimetric - %	<0.001 %	TM304					0.0093 #		
Asbestos Quantification - PCOM Evaluation - %	<0.001 %	TM304					<0.001 #		
Additional Asbestos Components (Using TM048)		TM304					None #		
Analysts Comments		TM304					N/C		
Asbestos Quantification - Total - %	<0.001 %	TM304					0.0094 #		

Validated

CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-3+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	WS13	WS13	WS13	WS13	WS19	WS19
			Depth (m)	0.30 - 0.30	0.50 - 0.50	1.00 - 1.00	1.80 - 1.80	0.30 - 0.30	1.00 - 1.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	22/08/2019	22/08/2019	22/08/2019	22/08/2019	22/08/2019	22/08/2019
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	28/08/2019	28/08/2019	28/08/2019	28/08/2019	28/08/2019	28/08/2019
			SDG Ref	190828-36	190828-36	190828-36	190828-36	190828-36	190828-36
			Lab Sample No.(s)	20598264	20598278	20598286	20598295	20598310	20598327
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		11	12	14	50	6.3	9.3
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	<12 M	<12 #	1720 M	13 M	<12 M
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 @ M	<0.01 @ M	0.0116 @ #	<0.01 @ M	<0.01 @ M	<0.01 M
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 @ M	<0.01 @ M	<0.01 @ #	<0.01 @ M	<0.01 @ M	<0.01 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 @ M	<0.015 @ M	<0.015 @ #	<0.015 @ M	<0.015 @ M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 @ M	<0.035 @ M	<0.035 @ #	<0.035 @ M	<0.035 @ M	<0.035 M
Sulphur, Total	<0.02 %	TM132		0.214	0.356	0.45	1.55	0.362	0.314
Sulphate, Total potential	<0.06 %	TM132		0.642	1.07	1.35	4.65	1.09	0.942
Soil Organic Matter (SOM)	<0.35 %	TM132		8.15 #	11.7 #	3.31 #	12.2 #	3.59 #	4.6 #
pH	1 pH Units	TM133		9.59 M	10.2 M	7.99 #	6.76 M	8.44 M	8.4 M
Cyanide, Total	<1 mg/kg	TM153		1.71 @ M	1.64 @ M	151 @ #	11.2 @ M	<1 M	1.87 M
Cyanide, Free	<1 mg/kg	TM153		<1 @ M	<1 @ M	<1 @ #	<1 @ M	<1 M	<1 M
Arsenic	<0.6 mg/kg	TM181		9.87 M	10 M	8.5 #	35.8 M	7.37 M	7.01 M
Cadmium	<0.02 mg/kg	TM181		0.383 M	0.207 M	<0.02 #	0.405 M	<0.02 M	0.185 M
Chromium	<0.9 mg/kg	TM181		16.1 M	24 M	11.1 #	16.2 M	20.4 M	25.1 M
Copper	<1.4 mg/kg	TM181		19.4 M	21.6 M	10.5 #	18.2 M	7.28 M	19 M
Iron	<1000 mg/kg	TM181		20900 #	26800 #	27100 #	20100 #	17500 #	18800 #
Lead	<0.7 mg/kg	TM181		40.6 M	35.8 M	18.8 #	47.3 M	16.8 M	34.9 M
Manganese	<0.13 mg/kg	TM181		1320 M	1380 M	1790 #	466 M	4630 M	3520 M
Mercury	<0.14 mg/kg	TM181		<0.14 M	<0.14 M	1.47 #	<0.14 M	<0.14 M	<0.14 M
Nickel	<0.2 mg/kg	TM181		15.2 M	14 M	13.3 #	17.1 M	8.1 M	12.5 M
Selenium	<1 mg/kg	TM181		<1 #	<1 #	<1 #	<1 #	2.18 #	1.02 #
Vanadium	<0.2 mg/kg	TM181		30.6 #	22.7 #	26.9 #	44.4 #	41.9 #	41.8 #
Zinc	<1.9 mg/kg	TM181		111 M	127 M	74.4 #	120 M	56.5 M	72.8 M
Sulphate, acid soluble (total)	<0.02 %	TM221		0.427	0.557	0.337	0.516	0.16	0.29
Water Soluble Sulphate as SO4 2:1 Extract	<0.004 g/l	TM243		0.208 M	0.222 M	0.192 #	2.27 M	0.185 M	0.256 M
Soluble Sulphate 2:1 extract as SO4 BRE	<0.004 g/l	TM243		0.208 M	0.222 M	0.192 #	2.27 M	0.185 M	0.256 M

Validated

CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-3+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	WS19	WS20	WSBP104	WSBP104	WSBP104	WSBP105
			Depth (m)	1.80 - 1.80	1.80 - 1.80	0.30 - 0.30	1.00 - 1.00	1.80 - 1.80	0.30 - 0.30
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	22/08/2019	22/08/2019	20/08/2019	20/08/2019	20/08/2019	20/08/2019
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	28/08/2019	28/08/2019	28/08/2019	28/08/2019	28/08/2019	28/08/2019
			SDG Ref	190828-36	190828-36	190828-36	190828-36	190828-36	190828-36
			Lab Sample No.(s)	20598351	20598518	20598585	20598597	20598613	20598682
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		36	25	6.5	14	36	7.6
Exchangeable Ammonia as N	<12 mg/kg	TM024		255 M	221 M	<12 M	<12 #	195 M	<12 #
Phenol	<0.01 mg/kg	TM062 (S)		0.0155 M	0.0133 M	<0.01 M	<0.01 @ #	<0.01 @ M	<0.01 @ #
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 @ #	<0.01 @ M	<0.01 @ #
Xylenols	<0.015 mg/kg	TM062 (S)		0.031 M	<0.015 M	<0.015 M	<0.015 @ #	<0.015 @ M	<0.015 @ #
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 M	<0.035 M	<0.035 @ #	<0.035 @ M	<0.035 @ #
Sulphur, Total	<0.02 %	TM132		0.115	0.0258	0.16	0.476	0.432	0.206
Sulphate, Total potential	<0.06 %	TM132		0.345	0.0774	0.48	1.43	1.3	0.618
Soil Organic Matter (SOM)	<0.35 %	TM132		8.05 #	1.35 #	2.24 #	1.81 #	5.69 #	3.59 #
pH	1 pH Units	TM133		7.48 M	8.08 M	9.05 M	11.9 #	6.92 M	10.7 #
Cyanide, Total	<1 mg/kg	TM153		<1 M	<1 M	<1 @ M	2.78 @ #	<1 @ M	<1 @ #
Cyanide, Free	<1 mg/kg	TM153		<1 M	<1 M	<1 @ M	<1 @ #	<1 @ M	<1 @ #
Arsenic	<0.6 mg/kg	TM181		17.7 M	17.2 M	6.37 M	7.41 #	13.3 M	11.3 #
Cadmium	<0.02 mg/kg	TM181		0.13 M	0.29 M	<0.02 M	0.958 #	<0.02 M	<0.2 #
Chromium	<0.9 mg/kg	TM181		29.6 M	30.7 M	25.3 M	401 #	66.4 M	47.2 #
Copper	<1.4 mg/kg	TM181		67.9 M	10.2 M	9.05 M	14 #	15.8 M	19.7 #
Iron	<1000 mg/kg	TM181		26400 #	40500 #	61500 #	146000 #	34200 #	152000 #
Lead	<0.7 mg/kg	TM181		41 M	23.5 M	21.4 M	17.2 #	33.6 M	104 #
Manganese	<0.13 mg/kg	TM181		470 M	1340 M	3450 M	38900 #	4170 M	4840 #
Mercury	<0.14 mg/kg	TM181		<0.14 M	<0.14 M	<0.14 M	<0.14 #	<0.14 M	<1.4 #
Nickel	<0.2 mg/kg	TM181		25.7 M	33.5 M	11.6 M	9.44 #	22.3 M	16.7 #
Selenium	<1 mg/kg	TM181		<1 #	<1 #	<1 #	11.5 #	1.44 #	<10 #
Vanadium	<0.2 mg/kg	TM181		46.1 #	51.9 #	69.5 #	432 #	92.4 #	153 #
Zinc	<1.9 mg/kg	TM181		124 M	100 M	121 M	57.1 #	119 M	261 #
Sulphate, acid soluble (total)	<0.02 %	TM221		0.111	0.0229	0.136	0.636	0.265	0.19
Water Soluble Sulphate as SO4 2:1 Extract	<0.004 g/l	TM243		0.18 M	0.0602 M	0.0617 M	0.229 #	1.13 M	0.187 #
Soluble Sulphate 2:1 extract as SO4 BRE	<0.004 g/l	TM243		0.18 M	0.0602 M	0.0617 M	0.229 #	1.13 M	0.187 #

CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-3+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	WSBP105	WSBP105	WSBP108	WSBP108	WSBP108	WSBP108
			Depth (m)	1.00 - 1.00	1.40 - 1.40	0.30 - 0.30	1.00 - 1.00	1.50 - 1.50	2.10 - 2.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	20/08/2019	20/08/2019	20/08/2019	20/08/2019	20/08/2019	20/08/2019
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	28/08/2019	28/08/2019	28/08/2019	28/08/2019	28/08/2019	28/08/2019
			SDG Ref	190828-36	190828-36	190828-36	190828-36	190828-36	190828-36
			Lab Sample No.(s)	20598696	20598707	20598541	20598552	20598565	20598757
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		6.5	7.9	9	13	37	24
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 #	<12 #	<12 M	23.5 #	279 M	32.6 M
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 @ #	<0.01 @ #	<0.01 @ M	<0.01 @ #	<0.01 @ M	<0.01 M
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 @ #	<0.01 @ #	<0.01 @ M	<0.01 @ #	<0.01 @ M	<0.01 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 @ #	<0.015 @ #	<0.015 @ M	<0.015 @ #	<0.015 @ M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 @ #	<0.035 @ #	<0.035 @ M	<0.035 @ #	<0.035 @ M	<0.035 M
Sulphur, Total	<0.02 %	TM132		0.185	0.263	0.136	0.414	0.115	0.0538
Sulphate, Total potential	<0.06 %	TM132		0.555	0.789	0.408	1.24	0.345	0.161
Soil Organic Matter (SOM)	<0.35 %	TM132		3.24 #	6.22 #	3.1 #	4.47 #	6.33 #	1.01 #
pH	1 pH Units	TM133		11.1 #	10.6 #	8.82 M	7.62 #	7.11 M	8.21 M
Cyanide, Total	<1 mg/kg	TM153		<1 @ #	<1 @ #	8.14 @ M	<1 @ #	<1 @ M	<1 M
Cyanide, Free	<1 mg/kg	TM153		<1 @ #	<1 @ #	<1 @ M	<1 @ #	<1 @ M	<1 M
Arsenic	<0.6 mg/kg	TM181		8.24 #	11.8 #	12.3 M	8.97 #	13.9 M	11.6 M
Cadmium	<0.02 mg/kg	TM181		<0.02 #	1.77 #	0.0261 M	0.0875 #	0.0274 M	<0.02 M
Chromium	<0.9 mg/kg	TM181		<0.9 #	32 #	43.3 M	48.6 #	35.8 M	24.2 M
Copper	<1.4 mg/kg	TM181		7.29 #	18.6 #	19.1 M	18.4 #	14.7 M	8.12 M
Iron	<1000 mg/kg	TM181		86800 #	172000 #	32200 #	26300 #	26200 #	31100 #
Lead	<0.7 mg/kg	TM181		37.2 #	121 #	49.9 M	19.5 #	34.6 M	19.5 M
Manganese	<0.13 mg/kg	TM181		2800 #	6390 #	2750 M	1670 #	289 M	1210 M
Mercury	<0.14 mg/kg	TM181		<0.14 #	<1.4 #	0.439 M	<0.14 #	<0.14 M	<0.14 M
Nickel	<0.2 mg/kg	TM181		8.79 #	21.4 #	13.5 M	26.8 #	24 M	29.2 M
Selenium	<1 mg/kg	TM181		<1 #	<10 #	<1 #	<1 #	<1 #	<1 #
Vanadium	<0.2 mg/kg	TM181		43.4 #	199 #	82 #	95.7 #	61.7 #	43 #
Zinc	<1.9 mg/kg	TM181		160 #	367 #	174 M	92.2 #	126 M	90.8 M
Sulphate, acid soluble (total)	<0.02 %	TM221		0.228	0.296	0.167	0.233	0.094	0.0254
Water Soluble Sulphate as SO4 2:1 Extract	<0.004 g/l	TM243		0.214 #	0.211 #	0.0768 M	0.511 #	0.129 M	0.0367 M
Soluble Sulphate 2:1 extract as SO4 BRE	<0.004 g/l	TM243		0.214 #	0.211 #	0.0768 M	0.511 #	0.129 M	0.0367 M

Validated

CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

Results Legend	
#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-3+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	WSBP108	WSBP109	WSBP109	WSBP109		
			Depth (m)	3.40 - 4.00	0.30 - 0.30	1.00 - 1.00	1.60 - 1.60		
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)		
			Date Sampled	20/08/2019	21/08/2019	21/08/2019	21/08/2019		
			Sample Time	00:00	00:00	00:00	00:00		
			Date Received	28/08/2019	28/08/2019	28/08/2019	28/08/2019		
			SDG Ref	190828-36	190828-36	190828-36	190828-36		
			Lab Sample No.(s)	20598778	20598625	20598767	20598871		
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		80	7.5	15	32		
Exchangeable Ammonia as N	<12 mg/kg	TM024		267 M	<12 M	34.5 M	222 M		
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 @ M	<0.01 M	0.0236 @ #	<0.01 M		
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 @ M	<0.01 M	<0.01 @ #	<0.01 M		
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 @ M	<0.015 M	0.0944 @ #	<0.015 M		
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 @ M	<0.035 M	0.118 @ #	<0.035 M		
Sulphur, Total	<0.02 %	TM132		2.88	0.27	0.223	0.0826		
Sulphate, Total potential	<0.06 %	TM132		8.64	0.81	0.669	0.248		
Soil Organic Matter (SOM)	<0.35 %	TM132		67.6 #	3.72 #	7.05 #	3.74 #		
pH	1 pH Units	TM133		6.45 M	8.93 M	7.92 M	6.92 M		
Cyanide, Total	<1 mg/kg	TM153		<1 M	<1 M	2.58 M	<1 M		
Cyanide, Free	<1 mg/kg	TM153		<1 M	<1 M	0.0118 M	<1 M		
Arsenic	<0.6 mg/kg	TM181		1.21 M	8.08 M	9.74 M	12.3 M		
Cadmium	<0.02 mg/kg	TM181		<0.02 M	<0.02 M	0.448 M	<0.02 M		
Chromium	<0.9 mg/kg	TM181		20.6 M	35 M	17 M	33 M		
Copper	<1.4 mg/kg	TM181		2.15 M	9.06 M	25 M	14.9 M		
Iron	<1000 mg/kg	TM181		10400 #	13700 #	23800 #	28100 #		
Lead	<0.7 mg/kg	TM181		4.82 M	5.26 M	34.9 M	31 M		
Manganese	<0.13 mg/kg	TM181		1590 M	2320 M	2510 M	232 M		
Mercury	<0.14 mg/kg	TM181		<0.14 M	<0.14 M	<0.14 M	<0.14 M		
Nickel	<0.2 mg/kg	TM181		2.09 M	23.8 M	27.2 M	25.3 M		
Selenium	<1 mg/kg	TM181		1.26 #	<1 #	1.19 #	<1 #		
Vanadium	<0.2 mg/kg	TM181		25.3 #	24 #	34.9 #	49.9 #		
Zinc	<1.9 mg/kg	TM181		13.2 M	50.2 M	155 M	120 M		
Sulphate, acid soluble (total)	<0.02 %	TM221		0.381	0.408	0.144	0.0451		
Water Soluble Sulphate as SO4 2:1 Extract	<0.004 g/l	TM243		0.298 M	0.595 M	0.115 M	0.0382 M		
Soluble Sulphate 2:1 extract as SO4 BRE	<0.004 g/l	TM243		0.298 M	0.595 M	0.115 M	0.0382 M		

CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

EPH CWG (Aliphatic) GC (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-3+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	Depth (m)	Sample Type	Date Sampled	Sample Time	Date Received	SDG Ref	Lab Sample No.(s)	AGS Reference
			WS01	1.80 - 1.80	Soil/Solid (S)	22/08/2019	00:00	28/08/2019	190828-36	20598417	
Aliphatics >C12-C16	<0.1 mg/kg	TM173	1570								
Aliphatics >C16-C21	<0.1 mg/kg	TM173	375								
Aliphatics >C21-C35	<0.1 mg/kg	TM173	114								
Aliphatics >C35-C44	<0.1 mg/kg	TM173	6.62								
Total Aliphatics >C12-C44	<0.1 mg/kg	TM173	2070								

Validated

CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

EPH CWG (Aromatic) GC (S)

Results Legend	
#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-3+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	Depth (m)	Sample Type	Date Sampled	Sample Time	Date Received	SDG Ref	Lab Sample No.(s)	AGS Reference
			WS01	1.80 - 1.80	Soil/Solid (S)	22/08/2019	00:00	28/08/2019	190828-36	20598417	
Aromatics >EC12-EC16	<0.1 mg/kg	TM173	3940								
Aromatics >EC16-EC21	<0.1 mg/kg	TM173	15700								
Aromatics >EC21-EC35	<0.1 mg/kg	TM173	12400								
Aromatics >EC35-EC44	<0.1 mg/kg	TM173	1470								
Aromatics >EC40-EC44	<0.1 mg/kg	TM173	383								
Total Aromatics >EC12-EC44	<0.1 mg/kg	TM173	33500								

Validated

CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-3+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	BHCP105	BHCP105	BHCP105	CPB5	CPB5	CPB5
			Depth (m)	0.30 - 0.30	0.50 - 0.50	1.00 - 1.00	4.00 - 4.00	7.80 - 7.80	8.70 - 8.70
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	20/08/2019	20/08/2019	20/08/2019	22/08/2019	22/08/2019	22/08/2019
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	28/08/2019	28/08/2019	28/08/2019	28/08/2019	28/08/2019	28/08/2019
			SDG Ref	190828-36	190828-36	190828-36	190828-36	190828-36	190828-36
			Lab Sample No.(s)	20598637	20598655	20598666	20598446	20598438	20598427
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		88.5	89.4	89.3	92.4	94.7	92.7
Acenaphthene-d10 % recovery**	%	TM218		89.9	91.6	96.4	94.8	89.4	91.4
Phenanthrene-d10 % recovery**	%	TM218		93.3	86.5	88.8	96.6	88.2	92.9
Chrysene-d12 % recovery**	%	TM218		94.8	81.4	84.8	89.1	95.6	89.3
Perylene-d12 % recovery**	%	TM218		91	77.5	78.3	88.5	88.9	92.2
Naphthalene	<0.009 mg/kg	TM218		0.0646 @ M	0.153 @ M	0.107 @ M	0.03 M	0.031 M	0.0112 M
Acenaphthylene	<0.012 mg/kg	TM218		0.0744 @ M	0.0601 @ M	0.0375 @ M	<0.012 M	<0.012 M	<0.012 M
Acenaphthene	<0.008 mg/kg	TM218		<0.016 @ M	0.0583 @ M	0.0368 @ M	<0.008 M	<0.008 M	<0.008 M
Fluorene	<0.01 mg/kg	TM218		0.0602 @ M	0.144 @ M	0.0885 @ M	<0.01 M	<0.01 M	<0.01 M
Phenanthrene	<0.015 mg/kg	TM218		0.324 @ M	0.402 @ M	0.239 @ M	0.0363 M	0.0956 M	0.0271 M
Anthracene	<0.016 mg/kg	TM218		0.0685 @ M	0.054 @ M	0.0453 @ M	<0.016 M	<0.016 M	<0.016 M
Fluoranthene	<0.017 mg/kg	TM218		0.415 @ M	0.402 @ M	0.229 @ M	0.0397 M	0.15 M	0.032 M
Pyrene	<0.015 mg/kg	TM218		0.321 @ M	0.386 @ M	0.231 @ M	0.0256 M	0.0958 M	0.0216 M
Benz(a)anthracene	<0.014 mg/kg	TM218		0.183 @ M	0.145 @ M	0.0829 @ M	<0.014 M	0.0661 M	<0.014 M
Chrysene	<0.01 mg/kg	TM218		0.172 @ M	0.152 @ M	0.08 @ M	<0.01 M	0.0504 M	<0.01 M
Benzo(b)fluoranthene	<0.015 mg/kg	TM218		0.192 @ M	0.229 @ M	0.148 @ M	<0.015 M	0.0737 M	0.018 M
Benzo(k)fluoranthene	<0.014 mg/kg	TM218		0.0723 @ M	0.0635 @ M	0.0282 @ M	<0.014 M	<0.014 M	<0.014 M
Benzo(a)pyrene	<0.015 mg/kg	TM218		0.16 @ M	0.11 @ M	0.0583 @ M	<0.015 M	0.0465 M	<0.015 M
Indeno(1,2,3-cd)pyrene	<0.018 mg/kg	TM218		0.151 @ M	0.105 @ M	0.0567 @ M	<0.018 M	<0.018 M	<0.018 M
Dibenzo(a,h)anthracene	<0.023 mg/kg	TM218		<0.046 @ M	<0.023 @ M	<0.023 @ M	<0.023 M	<0.023 M	<0.023 M
Benzo(g,h,i)perylene	<0.024 mg/kg	TM218		0.134 @ M	0.0964 @ M	0.0574 @ M	<0.024 M	<0.024 M	<0.024 M
PAH, Total Detected USEPA 16	<0.118 mg/kg	TM218		2.39	2.56	1.53	0.132	0.61	<0.118

Validated

CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-3+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	CPB7	CPB7	CPB7	CPB9	CPB9	CPB9
			Depth (m)	2.70 - 2.70	4.70 - 4.70	6.60 - 6.60	3.50 - 3.50	6.50 - 6.50	7.60 - 7.60
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	21/08/2019	21/08/2019	21/08/2019	19/08/2019	19/08/2019	19/08/2019
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	28/08/2019	28/08/2019	28/08/2019	28/08/2019	28/08/2019	28/08/2019
			SDG Ref	190828-36	190828-36	190828-36	190828-36	190828-36	190828-36
			Lab Sample No.(s)	20598824	20598832	20598839	20598847	20598859	20598882
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		82.8	83.9	94.8	85.6	89.5	91.6
Acenaphthene-d10 % recovery**	%	TM218		86.9	84	92.4	84.6	88.3	92
Phenanthrene-d10 % recovery**	%	TM218		89.3	84.9	91	81.4	86.1	89.2
Chrysene-d12 % recovery**	%	TM218		81.1	78.8	95.4	78.7	79.2	91.2
Perylene-d12 % recovery**	%	TM218		77.5	78.2	86.5	74.9	74	91.6
Naphthalene	<0.009 mg/kg	TM218		0.266 M	<0.009 M	0.128 M	0.335 M	0.0448 M	0.022 @ M
Acenaphthylene	<0.012 mg/kg	TM218		0.0468 M	<0.012 M	<0.012 M	1.14 M	0.181 M	0.0313 @ M
Acenaphthene	<0.008 mg/kg	TM218		0.0229 M	<0.008 M	<0.008 M	0.588 M	0.097 M	0.0135 @ M
Fluorene	<0.01 mg/kg	TM218		0.0723 M	<0.01 M	0.0363 M	2.31 M	0.276 M	0.0325 @ M
Phenanthrene	<0.015 mg/kg	TM218		0.504 M	<0.015 M	0.22 M	10.2 M	1.35 M	0.221 @ M
Anthracene	<0.016 mg/kg	TM218		0.114 M	<0.016 M	<0.016 M	2.36 M	0.298 M	0.0548 @ M
Fluoranthene	<0.017 mg/kg	TM218		0.813 M	0.0251 M	0.299 M	10 M	1.66 M	0.386 @ M
Pyrene	<0.015 mg/kg	TM218		0.615 M	<0.015 M	0.209 M	6.32 M	1.04 M	0.242 @ M
Benz(a)anthracene	<0.014 mg/kg	TM218		0.362 M	<0.014 M	0.127 M	2.92 M	0.53 M	0.125 @ M
Chrysene	<0.01 mg/kg	TM218		0.339 M	<0.01 M	0.106 M	2.49 M	0.441 M	0.0917 @ M
Benzo(b)fluoranthene	<0.015 mg/kg	TM218		0.634 M	<0.015 M	0.129 M	3.32 M	0.65 M	0.156 @ M
Benzo(k)fluoranthene	<0.014 mg/kg	TM218		0.196 M	<0.014 M	0.0479 M	1.2 M	0.229 M	0.0457 @ M
Benzo(a)pyrene	<0.015 mg/kg	TM218		0.334 M	<0.015 M	0.0893 M	2.18 M	0.395 M	0.0902 @ M
Indeno(1,2,3-cd)pyrene	<0.018 mg/kg	TM218		0.357 M	<0.018 M	0.067 M	1.79 M	0.281 M	0.0693 @ M
Dibenzo(a,h)anthracene	<0.023 mg/kg	TM218		0.0656 M	<0.023 M	<0.023 M	0.291 M	<0.023 M	<0.023 @ M
Benzo(g,h,i)perylene	<0.024 mg/kg	TM218		0.283 M	<0.024 M	0.0741 M	1.47 M	0.334 M	0.0634 @ M
PAH, Total Detected USEPA 16	<0.118 mg/kg	TM218		5.02	<0.118	1.53	48.9	7.8	1.64

Validated

CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-3+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	CPB9	CPB11	CPB11	CPB11	CPB13	CPB13
			Depth (m)	8.60 - 8.60	3.50 - 3.50	5.50 - 5.50	9.50 - 9.50	10.10 - 10.10	2.20 - 2.20
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	19/08/2019	20/08/2019	20/08/2019	20/08/2019	22/08/2019	22/08/2019
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	28/08/2019	28/08/2019	28/08/2019	28/08/2019	28/08/2019	28/08/2019
			SDG Ref	190828-36	190828-36	190828-36	190828-36	190828-36	190828-36
			Lab Sample No.(s)	20598896	20598788	20598798	20598808	20598531	20598492
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		97	94	82.7	94.9	93.2	88.5
Acenaphthene-d10 % recovery**	%	TM218		94.8	91.7	83.5	89	94	88.4
Phenanthrene-d10 % recovery**	%	TM218		90.6	89.1	86.6	84.7	100	86
Chrysene-d12 % recovery**	%	TM218		92.2	95.2	88.1	94.3	103	83.8
Perylene-d12 % recovery**	%	TM218		91.9	89.8	75.9	92.1	91.2	80.2
Naphthalene	<0.009 mg/kg	TM218		<0.009 @ M	0.382 M	<0.009 M	0.505 @ M	0.0207 M	<0.009 @ M
Acenaphthylene	<0.012 mg/kg	TM218		<0.012 @ M	0.352 M	<0.012 M	0.326 @ M	<0.012 M	<0.012 @ M
Acenaphthene	<0.008 mg/kg	TM218		<0.008 @ M	0.132 M	<0.008 M	0.046 @ M	<0.008 M	<0.008 @ M
Fluorene	<0.01 mg/kg	TM218		<0.01 @ M	0.462 M	<0.01 M	0.196 @ M	<0.01 M	<0.01 @ M
Phenanthrene	<0.015 mg/kg	TM218		<0.015 @ M	2.56 M	0.0483 M	0.938 @ M	<0.015 M	<0.015 @ M
Anthracene	<0.016 mg/kg	TM218		<0.016 @ M	0.596 M	<0.016 M	0.28 @ M	<0.016 M	<0.016 @ M
Fluoranthene	<0.017 mg/kg	TM218		0.0389 @ M	3.53 M	0.0678 M	1.59 @ M	<0.017 M	<0.017 @ M
Pyrene	<0.015 mg/kg	TM218		0.0299 @ M	2.39 M	0.0439 M	1.06 @ M	<0.015 M	<0.015 @ M
Benz(a)anthracene	<0.014 mg/kg	TM218		0.0312 @ M	1.35 M	<0.014 M	0.688 @ M	<0.014 M	<0.014 @ M
Chrysene	<0.01 mg/kg	TM218		0.0259 @ M	1.13 M	<0.01 M	0.523 @ M	<0.01 M	<0.01 @ M
Benzo(b)fluoranthene	<0.015 mg/kg	TM218		0.0551 @ M	1.1 M	<0.015 M	0.746 @ M	<0.015 M	<0.015 @ M
Benzo(k)fluoranthene	<0.014 mg/kg	TM218		0.0169 @ M	0.529 M	<0.014 M	0.282 @ M	<0.014 M	<0.014 @ M
Benzo(a)pyrene	<0.015 mg/kg	TM218		0.0304 @ M	1.04 M	<0.015 M	0.629 @ M	<0.015 M	<0.015 @ M
Indeno(1,2,3-cd)pyrene	<0.018 mg/kg	TM218		0.0311 @ M	0.794 M	<0.018 M	0.541 @ M	<0.018 M	<0.018 @ M
Dibenzo(a,h)anthracene	<0.023 mg/kg	TM218		<0.023 @ M	0.151 M	<0.023 M	0.0978 @ M	<0.023 M	<0.023 @ M
Benzo(g,h,i)perylene	<0.024 mg/kg	TM218		<0.024 @ M	0.77 M	<0.024 M	0.493 @ M	<0.024 M	<0.024 @ M
PAH, Total Detected USEPA 16	<0.118 mg/kg	TM218		0.259	17.3	0.16	8.94	<0.118	<0.118

Validated

CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

PAH by GCMS

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-3+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	CPB13	CPB18	CPB18	CPB18	CPBP101	CPBP101
			Depth (m)	4.20 - 4.20	0.30 - 0.30	0.50 - 0.50	1.90 - 1.90	0.30 - 0.30	1.00 - 1.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	22/08/2019	21/08/2019	21/08/2019	21/08/2019	20/08/2019	20/08/2019
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	28/08/2019	28/08/2019	28/08/2019	28/08/2019	28/08/2019	28/08/2019
			SDG Ref	190828-36	190828-36	190828-36	190828-36	190828-36	190828-36
			Lab Sample No.(s)	20598466	20598207	20598340	20598478	20598715	20598729
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		86.5	84.7	88.1	84.1	96.4	88.8
Acenaphthene-d10 % recovery**	%	TM218		87.7	82.2	87.3	85.6	79.9	92.4
Phenanthrene-d10 % recovery**	%	TM218		85.4	78.6	83.5	86.6	88.1	87
Chrysene-d12 % recovery**	%	TM218		80.2	64	64.7	77.2	79.8	88.7
Perylene-d12 % recovery**	%	TM218		75.9	59.1	56.4	71.8	78.1	86.8
Naphthalene	<0.009 mg/kg	TM218		<0.009 @ M	0.182 @ M	1.66 @ M	0.0556 M	1.35 @ M	1.54 @ M
Acenaphthylene	<0.012 mg/kg	TM218		<0.012 @ M	<0.06 @ M	0.162 @ M	<0.012 M	0.99 @ M	0.359 @ M
Acenaphthene	<0.008 mg/kg	TM218		<0.008 @ M	<0.04 @ M	1.61 @ M	0.0285 M	0.598 @ M	0.814 @ M
Fluorene	<0.01 mg/kg	TM218		<0.01 @ M	0.0867 @ M	1.76 @ M	0.0334 M	1.46 @ M	1.35 @ M
Phenanthrene	<0.015 mg/kg	TM218		<0.015 @ M	0.46 @ M	9.65 @ M	0.316 M	30.8 @ M	16.4 @ M
Anthracene	<0.016 mg/kg	TM218		<0.016 @ M	0.115 @ M	2.57 @ M	0.0642 M	4.27 @ M	2.55 @ M
Fluoranthene	<0.017 mg/kg	TM218		<0.017 @ M	0.677 @ M	9 @ M	0.486 M	34.8 @ M	17.3 @ M
Pyrene	<0.015 mg/kg	TM218		<0.015 @ M	0.639 @ M	7.06 @ M	0.406 M	21.5 @ M	11.1 @ M
Benz(a)anthracene	<0.014 mg/kg	TM218		<0.014 @ M	0.379 @ M	3.1 @ M	0.26 M	10.1 @ M	5.9 @ M
Chrysene	<0.01 mg/kg	TM218		<0.01 @ M	0.376 @ M	2.71 @ M	0.269 M	8.87 @ M	5.81 @ M
Benzo(b)fluoranthene	<0.015 mg/kg	TM218		<0.015 @ M	0.782 @ M	3.27 @ M	0.377 M	10.2 @ M	7.65 @ M
Benzo(k)fluoranthene	<0.014 mg/kg	TM218		<0.014 @ M	0.226 @ M	1.16 @ M	0.125 M	3.96 @ M	2.57 @ M
Benzo(a)pyrene	<0.015 mg/kg	TM218		<0.015 @ M	0.45 @ M	2.07 @ M	0.233 M	7.05 @ M	4.62 @ M
Indeno(1,2,3-cd)pyrene	<0.018 mg/kg	TM218		<0.018 @ M	0.452 @ M	1.33 @ M	0.216 M	6.6 @ M	3.81 @ M
Dibenzo(a,h)anthracene	<0.023 mg/kg	TM218		<0.023 @ M	<0.115 @ M	0.316 @ M	<0.023 M	1.29 @ M	0.615 @ M
Benzo(g,h,i)perylene	<0.024 mg/kg	TM218		<0.024 @ M	0.41 @ M	1.1 @ M	0.183 M	5.54 @ M	3.17 @ M
PAH, Total Detected USEPA 16	<0.118 mg/kg	TM218		<0.118	5.23	48.5	3.05	149	85.6

Validated

CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-3+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	CPBP101	CPBR3	CPBR3	CPBR3	CPBR3	CPBR4
			Depth (m)	1.50 - 1.50	3.40 - 3.40	4.80 - 4.80	7.40 - 7.40	9.10 - 9.10	2.50 - 2.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	20/08/2019	20/08/2019	20/08/2019	20/08/2019	20/08/2019	21/08/2019
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	28/08/2019	28/08/2019	28/08/2019	28/08/2019	28/08/2019	28/08/2019
			SDG Ref	190828-36	190828-36	190828-36	190828-36	190828-36	190828-36
			Lab Sample No.(s)	20598741	20598911	20598922	20598930	20598817	20598217
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		83.9	92.2	91.3	90.5	101	92.4
Acenaphthene-d10 % recovery**	%	TM218		88.4	91.9	92	92.1	96.9	94.1
Phenanthrene-d10 % recovery**	%	TM218		87.8	89.3	88.6	94.8	93.4	95.5
Chrysene-d12 % recovery**	%	TM218		87.7	85.4	80.2	89.4	91.5	92.8
Perylene-d12 % recovery**	%	TM218		93.1	73.7	73.7	82.5	88.8	91.6
Naphthalene	<0.009 mg/kg	TM218		1.49 M	0.642 @ M	0.26 M	<0.018 @ M	<0.009 M	2.36 M
Acenaphthylene	<0.012 mg/kg	TM218		0.253 M	0.182 @ M	0.0828 M	<0.024 @ M	<0.012 M	0.899 M
Acenaphthene	<0.008 mg/kg	TM218		0.634 M	0.0626 @ M	<0.008 M	<0.016 @ M	<0.008 M	0.654 M
Fluorene	<0.01 mg/kg	TM218		1.2 M	0.173 @ M	0.0942 M	<0.02 @ M	<0.01 M	1.97 M
Phenanthrene	<0.015 mg/kg	TM218		12.4 M	0.712 @ M	0.497 M	0.0832 @ M	<0.015 M	7.52 M
Anthracene	<0.016 mg/kg	TM218		1.91 M	0.183 @ M	0.109 M	<0.032 @ M	<0.016 M	1.78 M
Fluoranthene	<0.017 mg/kg	TM218		<0.085 M	2.01 @ M	0.789 M	0.182 @ M	<0.017 M	8.36 M
Pyrene	<0.015 mg/kg	TM218		8.26 M	1.5 @ M	0.55 M	0.136 @ M	<0.015 M	5.14 M
Benz(a)anthracene	<0.014 mg/kg	TM218		3.97 M	0.757 @ M	0.303 M	0.0702 @ M	<0.014 M	2.77 M
Chrysene	<0.01 mg/kg	TM218		3.32 M	0.685 @ M	0.287 M	0.061 @ M	<0.01 M	1.99 M
Benzo(b)fluoranthene	<0.015 mg/kg	TM218		5.2 M	0.989 @ M	0.436 M	<0.03 @ M	<0.015 M	3.35 M
Benzo(k)fluoranthene	<0.014 mg/kg	TM218		1.73 M	0.327 @ M	0.141 M	<0.028 @ M	<0.014 M	1.08 M
Benzo(a)pyrene	<0.015 mg/kg	TM218		3.05 M	0.613 @ M	0.229 M	<0.03 @ M	<0.015 M	1.93 M
Indeno(1,2,3-cd)pyrene	<0.018 mg/kg	TM218		2.9 M	0.457 @ M	0.204 M	<0.036 @ M	<0.018 M	1.87 M
Dibenzo(a,h)anthracene	<0.023 mg/kg	TM218		0.389 M	0.116 @ M	<0.023 M	<0.046 @ M	<0.023 M	0.276 M
Benzo(g,h,i)perylene	<0.024 mg/kg	TM218		2.15 M	0.493 @ M	0.201 M	<0.048 @ M	<0.024 M	1.22 M
PAH, Total Detected USEPA 16	<0.118 mg/kg	TM218		48.9	9.9	4.18	0.533	<0.118	43.2

Validated

CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-3+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	CPBR4	CPBR4	CPBR4	CPBR9	CPBR9	CPBR9
			Depth (m)	3.50 - 3.50	7.50 - 7.50	9.40 - 9.40	3.10 - 3.10	4.20 - 4.20	8.80 - 8.80
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	21/08/2019	21/08/2019	21/08/2019	21/08/2019	21/08/2019	21/08/2019
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	28/08/2019	28/08/2019	28/08/2019	28/08/2019	28/08/2019	28/08/2019
			SDG Ref	190828-36	190828-36	190828-36	190828-36	190828-36	190828-36
			Lab Sample No.(s)	20598227	20598239	20598248	20598939	20598946	20598956
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		90.8	90.7	94.9	93.4	91.2	94.7
Acenaphthene-d10 % recovery**	%	TM218		92.8	89.3	96.5	92	90.4	95
Phenanthrene-d10 % recovery**	%	TM218		95	87	97	90.8	89.2	100
Chrysene-d12 % recovery**	%	TM218		94.8	78.3	98.8	83.4	85.1	104
Perylene-d12 % recovery**	%	TM218		93.6	75.2	94.9	77	82.3	102
Naphthalene	<0.009 mg/kg	TM218		1.72 M	0.264 @ M	0.0781 @ M	<0.009 M	<0.009 M	0.0306 M
Acenaphthylene	<0.012 mg/kg	TM218		0.854 M	<0.024 @ M	0.0234 @ M	<0.012 M	<0.012 M	<0.012 M
Acenaphthene	<0.008 mg/kg	TM218		1.13 M	0.123 @ M	<0.008 @ M	<0.008 M	<0.008 M	<0.008 M
Fluorene	<0.01 mg/kg	TM218		2.6 M	0.149 @ M	0.022 @ M	<0.01 M	<0.01 M	<0.01 M
Phenanthrene	<0.015 mg/kg	TM218		8.98 M	0.508 @ M	0.0907 @ M	0.0526 M	<0.015 M	0.0726 M
Anthracene	<0.016 mg/kg	TM218		1.69 M	0.315 @ M	0.0268 @ M	<0.016 M	<0.016 M	0.021 M
Fluoranthene	<0.017 mg/kg	TM218		8.06 M	0.399 @ M	0.223 @ M	0.0817 M	<0.017 M	0.141 M
Pyrene	<0.015 mg/kg	TM218		4.82 M	0.261 @ M	0.153 @ M	0.0614 M	<0.015 M	0.121 M
Benz(a)anthracene	<0.014 mg/kg	TM218		2.5 M	0.112 @ M	0.105 @ M	0.0503 M	<0.014 M	0.118 M
Chrysene	<0.01 mg/kg	TM218		1.71 M	0.104 @ M	0.0919 @ M	0.0437 M	<0.01 M	0.116 M
Benzo(b)fluoranthene	<0.015 mg/kg	TM218		2.77 M	0.135 @ M	0.109 @ M	0.0709 M	<0.015 M	0.209 M
Benzo(k)fluoranthene	<0.014 mg/kg	TM218		0.946 M	<0.028 @ M	0.0383 @ M	<0.014 M	<0.014 M	0.081 M
Benzo(a)pyrene	<0.015 mg/kg	TM218		1.64 M	<0.03 @ M	0.0655 @ M	<0.015 M	<0.015 M	0.116 M
Indeno(1,2,3-cd)pyrene	<0.018 mg/kg	TM218		1.53 M	<0.036 @ M	0.061 @ M	<0.018 M	<0.018 M	0.102 M
Dibenzo(a,h)anthracene	<0.023 mg/kg	TM218		0.216 M	<0.046 @ M	<0.023 @ M	<0.023 M	<0.023 M	<0.023 M
Benzo(g,h,i)perylene	<0.024 mg/kg	TM218		0.995 M	<0.048 @ M	0.0424 @ M	<0.024 M	<0.024 M	0.11 M
PAH, Total Detected USEPA 16	<0.118 mg/kg	TM218		42.2	2.37	1.13	0.361	<0.118	1.24

Validated

CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-3+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	WS01	WS01	WS01	WS04	WS04	WS04
			Depth (m)	0.30 - 0.30	0.50 - 0.50	1.80 - 1.80	0.30 - 0.30	1.00 - 1.00	3.40 - 3.80
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	22/08/2019	22/08/2019	22/08/2019	22/08/2019	22/08/2019	22/08/2019
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	28/08/2019	28/08/2019	28/08/2019	28/08/2019	28/08/2019	28/08/2019
			SDG Ref	190828-36	190828-36	190828-36	190828-36	190828-36	190828-36
			Lab Sample No.(s)	20598388	20598407	20598417	20598362	20598372	20598505
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		82.5	101	125	86.5	94.4	94.7
Acenaphthene-d10 % recovery**	%	TM218		78	69.5	355	75.9	92.8	94.5
Phenanthrene-d10 % recovery**	%	TM218		77.5	93	80	85.4	86	95.1
Chrysene-d12 % recovery**	%	TM218		93.5	106	105	85.5	80	103
Perylene-d12 % recovery**	%	TM218		88.5	99.5	65	75.5	77	95
Naphthalene	<0.009 mg/kg	TM218		50.9 M	5.74 M	3700	15.7 @ M	12.3 @ M	0.138 M
Acenaphthylene	<0.012 mg/kg	TM218		33.8 M	3.2 M	169	13.6 @ M	4.66 @ M	<0.012 M
Acenaphthene	<0.008 mg/kg	TM218		2.6 M	<0.4 M	447	2.75 @ M	3.16 @ M	<0.008 M
Fluorene	<0.01 mg/kg	TM218		34.9 M	3.45 M	3670	23.2 @ M	14 @ M	0.0486 M
Phenanthrene	<0.015 mg/kg	TM218		137 M	14.1 M	10300	80.2 @ M	98.8 @ M	0.264 M
Anthracene	<0.016 mg/kg	TM218		37.1 M	3.65 M	1500	15.4 @ M	16.8 @ M	<0.016 M
Fluoranthene	<0.017 mg/kg	TM218		182 M	17.3 M	6870	62 @ M	109 @ M	0.26 M
Pyrene	<0.015 mg/kg	TM218		125 M	11.7 M	4260	40.3 @ M	63.4 @ M	0.138 M
Benz(a)anthracene	<0.014 mg/kg	TM218		79.2 M	7.52 M	1740	18 @ M	9.61 @ M	<0.014 M
Chrysene	<0.01 mg/kg	TM218		67.2 M	6.43 M	1060	14 @ M	8.82 @ M	<0.01 M
Benzo(b)fluoranthene	<0.015 mg/kg	TM218		88.7 M	6.82 M	1500	13.9 @ M	11.2 @ M	<0.015 M
Benzo(k)fluoranthene	<0.014 mg/kg	TM218		33.7 M	3.23 M	535	6.01 @ M	4.11 @ M	<0.014 M
Benzo(a)pyrene	<0.015 mg/kg	TM218		64.5 M	5.63 M	871	10.8 @ M	6.43 @ M	<0.015 M
Indeno(1,2,3-cd)pyrene	<0.018 mg/kg	TM218		47.6 M	4.21 M	655	8.25 @ M	6.34 @ M	<0.018 M
Dibenzo(a,h)anthracene	<0.023 mg/kg	TM218		10.3 M	<1.15 M	94.1	1.41 @ M	1.07 @ M	<0.023 M
Benzo(g,h,i)perylene	<0.024 mg/kg	TM218		44.4 M	3.69 M	376	6.22 @ M	5.07 @ M	<0.024 M
PAH, Total Detected USEPA 16	<0.118 mg/kg	TM218		1040	96.6	37800	332	375	0.848

Validated

CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-3+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	WS13	WS13	WS13	WS13	WS19	WS19
			Depth (m)	0.30 - 0.30	0.50 - 0.50	1.00 - 1.00	1.80 - 1.80	0.30 - 0.30	1.00 - 1.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	22/08/2019	22/08/2019	22/08/2019	22/08/2019	22/08/2019	22/08/2019
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	28/08/2019	28/08/2019	28/08/2019	28/08/2019	28/08/2019	28/08/2019
			SDG Ref	190828-36	190828-36	190828-36	190828-36	190828-36	190828-36
			Lab Sample No.(s)	20598264	20598278	20598286	20598295	20598310	20598327
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		95.1	86.4	91.4	92.5	92.9	92.6
Acenaphthene-d10 % recovery**	%	TM218		93.6	89.7	91	98.6	91.4	91.2
Phenanthrene-d10 % recovery**	%	TM218		91.9	89.1	90.4	96.3	85.1	86.9
Chrysene-d12 % recovery**	%	TM218		82.9	80.9	83.6	103	86.1	91.1
Perylene-d12 % recovery**	%	TM218		82.7	77.5	83.3	95.9	78.9	87
Naphthalene	<0.009 mg/kg	TM218		1.14 @ M	1.47 M	0.93 #	7.08 M	0.708 M	0.546 M
Acenaphthylene	<0.012 mg/kg	TM218		1.04 @ M	1.39 M	1.48 #	0.158 M	0.328 M	0.246 M
Acenaphthene	<0.008 mg/kg	TM218		0.173 @ M	0.752 M	2.9 #	3.05 M	0.0471 M	0.0303 M
Fluorene	<0.01 mg/kg	TM218		0.483 @ M	0.832 M	1.67 #	1.71 M	0.0849 M	0.0442 M
Phenanthrene	<0.015 mg/kg	TM218		8.66 @ M	13.1 M	1.54 #	2.54 M	0.563 M	0.407 M
Anthracene	<0.016 mg/kg	TM218		2.42 @ M	3.16 M	1.27 #	0.325 M	0.161 M	0.123 M
Fluoranthene	<0.017 mg/kg	TM218		16.7 @ M	22 M	4.22 #	0.761 M	1.01 M	0.917 M
Pyrene	<0.015 mg/kg	TM218		13.5 @ M	17.6 M	2.84 #	0.56 M	0.761 M	0.721 M
Benz(a)anthracene	<0.014 mg/kg	TM218		8.85 @ M	12.8 M	1.49 #	0.234 M	0.585 M	0.582 M
Chrysene	<0.01 mg/kg	TM218		7.69 @ M	11.8 M	1.37 #	0.268 M	0.536 M	0.56 M
Benzo(b)fluoranthene	<0.015 mg/kg	TM218		11.6 @ M	17.1 M	2.23 #	0.395 M	0.867 M	0.917 M
Benzo(k)fluoranthene	<0.014 mg/kg	TM218		4.08 @ M	7.45 M	0.836 #	0.141 M	0.308 M	0.319 M
Benzo(a)pyrene	<0.015 mg/kg	TM218		7.84 @ M	10 M	1.32 #	0.184 M	0.54 M	0.559 M
Indeno(1,2,3-cd)pyrene	<0.018 mg/kg	TM218		7.54 @ M	10.3 M	1.64 #	0.218 M	0.508 M	0.582 M
Dibenzo(a,h)anthracene	<0.023 mg/kg	TM218		1.63 @ M	1.89 M	0.286 #	<0.023 M	0.107 M	0.119 M
Benzo(g,h,i)perylene	<0.024 mg/kg	TM218		6.66 @ M	8.33 M	1.58 #	0.177 M	0.515 M	0.563 M
PAH, Total Detected USEPA 16	<0.118 mg/kg	TM218		99.9	140	27.6	17.8	7.63	7.24

Validated

CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-3+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	WS19	WS20	WSBP104	WSBP104	WSBP104	WSBP105
			Depth (m)	1.80 - 1.80	1.80 - 1.80	0.30 - 0.30	1.00 - 1.00	1.80 - 1.80	0.30 - 0.30
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	22/08/2019	22/08/2019	20/08/2019	20/08/2019	20/08/2019	20/08/2019
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	28/08/2019	28/08/2019	28/08/2019	28/08/2019	28/08/2019	28/08/2019
			SDG Ref	190828-36	190828-36	190828-36	190828-36	190828-36	190828-36
			Lab Sample No.(s)	20598351	20598518	20598585	20598597	20598613	20598682
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		89.6	91.8	90.6	85.4	91.6	95.8
Acenaphthene-d10 % recovery**	%	TM218		81.9	88.5	92.3	89	89.8	93.8
Phenanthrene-d10 % recovery**	%	TM218		84	86.3	94.4	89.5	91.2	92.1
Chrysene-d12 % recovery**	%	TM218		89.1	95.6	97.3	76.3	82.3	85.8
Perylene-d12 % recovery**	%	TM218		83.1	89.5	98	78.3	80.9	84.9
Naphthalene	<0.009 mg/kg	TM218		0.0641 M	<0.009 M	0.0567 @ M	0.341 @ #	0.35 @ M	1.01 @ #
Acenaphthylene	<0.012 mg/kg	TM218		0.0221 M	<0.012 M	0.026 @ M	0.0662 @ #	0.0197 @ M	0.0668 @ #
Acenaphthene	<0.008 mg/kg	TM218		0.0125 M	<0.008 M	<0.008 @ M	0.221 @ #	0.0493 @ M	0.152 @ #
Fluorene	<0.01 mg/kg	TM218		<0.01 M	<0.01 M	<0.01 @ M	0.345 @ #	0.0422 @ M	0.0957 @ #
Phenanthrene	<0.015 mg/kg	TM218		0.072 M	<0.015 M	0.062 @ M	2 @ #	0.507 @ M	0.689 @ #
Anthracene	<0.016 mg/kg	TM218		<0.016 M	<0.016 M	0.0213 @ M	0.227 @ #	0.104 @ M	0.256 @ #
Fluoranthene	<0.017 mg/kg	TM218		0.0897 M	<0.017 M	0.139 @ M	2.98 @ #	0.774 @ M	2.76 @ #
Pyrene	<0.015 mg/kg	TM218		0.069 M	<0.015 M	0.118 @ M	2.78 @ #	0.708 @ M	2.33 @ #
Benz(a)anthracene	<0.014 mg/kg	TM218		0.0424 M	<0.014 M	0.0844 @ M	1.63 @ #	0.368 @ M	0.935 @ #
Chrysene	<0.01 mg/kg	TM218		0.048 M	<0.01 M	0.0967 @ M	1.9 @ #	0.363 @ M	0.782 @ #
Benzo(b)fluoranthene	<0.015 mg/kg	TM218		0.0567 M	<0.015 M	0.144 @ M	2.75 @ #	0.434 @ M	1.34 @ #
Benzo(k)fluoranthene	<0.014 mg/kg	TM218		<0.014 M	<0.014 M	0.0447 @ M	0.991 @ #	0.208 @ M	0.485 @ #
Benzo(a)pyrene	<0.015 mg/kg	TM218		0.0364 M	<0.015 M	0.0919 @ M	1.86 @ #	0.385 @ M	0.929 @ #
Indeno(1,2,3-cd)pyrene	<0.018 mg/kg	TM218		0.0348 M	<0.018 M	0.103 @ M	1.59 @ #	0.283 @ M	0.792 @ #
Dibenzo(a,h)anthracene	<0.023 mg/kg	TM218		<0.023 M	<0.023 M	<0.023 @ M	0.277 @ #	0.0581 @ M	0.123 @ #
Benzo(g,h,i)perylene	<0.024 mg/kg	TM218		<0.024 M	<0.024 M	0.0935 @ M	1.32 @ #	0.241 @ M	0.785 @ #
PAH, Total Detected USEPA 16	<0.118 mg/kg	TM218		0.548	<0.118	1.08	21.3	4.89	13.5

Validated

CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-3+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	WSBP105	WSBP105	WSBP108	WSBP108	WSBP108	WSBP108
			Depth (m)	1.00 - 1.00	1.40 - 1.40	0.30 - 0.30	1.00 - 1.00	1.50 - 1.50	2.10 - 2.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	20/08/2019	20/08/2019	20/08/2019	20/08/2019	20/08/2019	20/08/2019
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	28/08/2019	28/08/2019	28/08/2019	28/08/2019	28/08/2019	28/08/2019
			SDG Ref	190828-36	190828-36	190828-36	190828-36	190828-36	190828-36
			Lab Sample No.(s)	20598696	20598707	20598541	20598552	20598565	20598757
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		94.4	95.9	92.3	90.6	96.1	91.3
Acenaphthene-d10 % recovery**	%	TM218		91.7	92.6	91.9	85.2	89.7	89.6
Phenanthrene-d10 % recovery**	%	TM218		95	94.9	88.6	84.3	86.9	92.1
Chrysene-d12 % recovery**	%	TM218		84.8	88	90	75.7	83.4	87.8
Perylene-d12 % recovery**	%	TM218		85.5	86.9	89.2	72.6	82.8	86.2
Naphthalene	<0.009 mg/kg	TM218		0.634 @ #	0.304 @ #	0.358 @ M	6.79 @ #	2.39 @ M	0.0318 M
Acenaphthylene	<0.012 mg/kg	TM218		0.126 @ #	0.0512 @ #	0.0356 @ M	0.0498 @ #	<0.012 @ M	<0.012 M
Acenaphthene	<0.008 mg/kg	TM218		1 @ #	0.13 @ #	0.0244 @ M	0.116 @ #	<0.008 @ M	<0.008 M
Fluorene	<0.01 mg/kg	TM218		0.608 @ #	0.0911 @ #	0.0212 @ M	0.0666 @ #	<0.01 @ M	<0.01 M
Phenanthrene	<0.015 mg/kg	TM218		6.5 @ #	0.458 @ #	0.2 @ M	0.0805 @ #	0.0268 @ M	<0.015 M
Anthracene	<0.016 mg/kg	TM218		2 @ #	0.146 @ #	0.0639 @ M	<0.016 @ #	<0.016 @ M	<0.016 M
Fluoranthene	<0.017 mg/kg	TM218		11.3 @ #	1.18 @ #	0.723 @ M	0.0343 @ #	0.0419 @ M	<0.017 M
Pyrene	<0.015 mg/kg	TM218		9.07 @ #	1.06 @ #	0.625 @ M	0.0237 @ #	0.0345 @ M	<0.015 M
Benz(a)anthracene	<0.014 mg/kg	TM218		3.66 @ #	0.409 @ #	0.423 @ M	<0.014 @ #	<0.014 @ M	<0.014 M
Chrysene	<0.01 mg/kg	TM218		3 @ #	0.375 @ #	0.444 @ M	0.0284 @ #	0.0231 @ M	<0.01 M
Benzo(b)fluoranthene	<0.015 mg/kg	TM218		4.35 @ #	0.666 @ #	0.728 @ M	0.0303 @ #	0.0258 @ M	<0.015 M
Benzo(k)fluoranthene	<0.014 mg/kg	TM218		1.45 @ #	0.229 @ #	0.231 @ M	<0.014 @ #	<0.014 @ M	<0.014 M
Benzo(a)pyrene	<0.015 mg/kg	TM218		3.39 @ #	0.438 @ #	0.44 @ M	<0.015 @ #	<0.015 @ M	<0.015 M
Indeno(1,2,3-cd)pyrene	<0.018 mg/kg	TM218		2.75 @ #	0.375 @ #	0.416 @ M	<0.018 @ #	<0.018 @ M	<0.018 M
Dibenzo(a,h)anthracene	<0.023 mg/kg	TM218		0.453 @ #	0.0665 @ #	0.0586 @ M	<0.023 @ #	<0.023 @ M	<0.023 M
Benzo(g,h,i)perylene	<0.024 mg/kg	TM218		2.68 @ #	0.356 @ #	0.37 @ M	<0.024 @ #	<0.024 @ M	<0.024 M
PAH, Total Detected USEPA 16	<0.118 mg/kg	TM218		53	6.33	5.16	7.22	2.55	<0.118

Validated

CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-3+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	WSBP108	WSBP109	WSBP109	WSBP109		
			Depth (m)	3.40 - 4.00	0.30 - 0.30	1.00 - 1.00	1.60 - 1.60		
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)		
			Date Sampled	20/08/2019	21/08/2019	21/08/2019	21/08/2019		
			Sample Time	00:00	00:00	00:00	00:00		
			Date Received	28/08/2019	28/08/2019	28/08/2019	28/08/2019		
			SDG Ref	190828-36	190828-36	190828-36	190828-36		
			Lab Sample No.(s)	20598778	20598625	20598767	20598871		
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		83.1	92.4	84.7	81.9		
Acenaphthene-d10 % recovery**	%	TM218		84.6	90	86.3	82.6		
Phenanthrene-d10 % recovery**	%	TM218		84.8	86	81.9	84.3		
Chrysene-d12 % recovery**	%	TM218		75.7	79.2	74.9	78.3		
Perylene-d12 % recovery**	%	TM218		73.2	81.1	71.7	77.4		
Naphthalene	<0.009 mg/kg	TM218		<0.009 M	0.105 @ M	29 @ #	13.1 M		
Acenaphthylene	<0.012 mg/kg	TM218		<0.012 M	<0.06 @ M	<0.06 @ #	<0.012 M		
Acenaphthene	<0.008 mg/kg	TM218		<0.008 M	<0.04 @ M	0.19 @ #	<0.008 M		
Fluorene	<0.01 mg/kg	TM218		<0.01 M	<0.05 @ M	0.124 @ #	<0.01 M		
Phenanthrene	<0.015 mg/kg	TM218		<0.015 M	0.195 @ M	0.186 @ #	<0.015 M		
Anthracene	<0.016 mg/kg	TM218		<0.016 M	<0.08 @ M	<0.08 @ #	<0.016 M		
Fluoranthene	<0.017 mg/kg	TM218		<0.017 M	0.499 @ M	<0.085 @ #	<0.017 M		
Pyrene	<0.015 mg/kg	TM218		<0.015 M	0.399 @ M	<0.075 @ #	<0.015 M		
Benz(a)anthracene	<0.014 mg/kg	TM218		<0.014 M	0.267 @ M	<0.07 @ #	<0.014 M		
Chrysene	<0.01 mg/kg	TM218		<0.01 M	0.313 @ M	<0.05 @ #	<0.01 M		
Benzo(b)fluoranthene	<0.015 mg/kg	TM218		<0.015 M	0.658 @ M	<0.075 @ #	<0.015 M		
Benzo(k)fluoranthene	<0.014 mg/kg	TM218		<0.014 M	0.236 @ M	<0.07 @ #	<0.014 M		
Benzo(a)pyrene	<0.015 mg/kg	TM218		<0.015 M	0.272 @ M	<0.075 @ #	<0.015 M		
Indeno(1,2,3-cd)pyrene	<0.018 mg/kg	TM218		<0.018 M	0.421 @ M	<0.09 @ #	<0.018 M		
Dibenzo(a,h)anthracene	<0.023 mg/kg	TM218		<0.023 M	<0.115 @ M	<0.115 @ #	<0.023 M		
Benzo(g,h,i)perylene	<0.024 mg/kg	TM218		<0.024 M	0.415 @ M	<0.12 @ #	<0.024 M		
PAH, Total Detected USEPA 16	<0.118 mg/kg	TM218		<0.118	3.78	29.5	13.1		

Validated

CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

TPH CWG (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-3+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	BHCP105	BHCP105	BHCP105	CPB5	CPB5	CPB5
			Depth (m)	0.30 - 0.30	0.50 - 0.50	1.00 - 1.00	4.00 - 4.00	7.80 - 7.80	8.70 - 8.70
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	20/08/2019	20/08/2019	20/08/2019	22/08/2019	22/08/2019	22/08/2019
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	28/08/2019	28/08/2019	28/08/2019	28/08/2019	28/08/2019	28/08/2019
			SDG Ref	190828-36	190828-36	190828-36	190828-36	190828-36	190828-36
			Lab Sample No.(s)	20598637	20598655	20598666	20598446	20598438	20598427
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		97.1 @	102 @	101 @	109 @	86.1 @	99.7 @
GRO TOT (Moisture Corrected)	<0.1 mg/kg	TM089		2.64 @ M	28.7 @ M	19.8 @ M	<0.2 @ M	<0.2 @ M	<0.2 @ M
Aliphatics >C5-C6	<0.01 mg/kg	TM089		<0.1 @	<0.02 @	<0.02 @	<0.02 @	<0.02 @	<0.02 @
Aliphatics >C6-C8	<0.01 mg/kg	TM089		0.108 @	0.0594 @	0.0511 @	<0.02 @	<0.02 @	<0.02 @
Aliphatics >C8-C10	<0.01 mg/kg	TM089		0.285 @	1.52 @	1.07 @	<0.02 @	<0.02 @	<0.02 @
Aliphatics >C10-C12	<0.01 mg/kg	TM089		1.08 @	15.5 @	10.6 @	<0.02 @	<0.02 @	<0.02 @
Aliphatics >C12-C16	<0.1 mg/kg	TM173		4.34	257	302	<0.1	<0.1	<0.1
Aliphatics >C16-C21	<0.1 mg/kg	TM173		13.2	330	368	<0.1	7.44	<0.1
Aliphatics >C21-C35	<0.1 mg/kg	TM173		55.1	425	456	<0.1	22.9	<0.1
Aliphatics >C35-C44	<0.1 mg/kg	TM173		49.9	57.2	79.3	<0.1	<0.1	<0.1
Total Aliphatics >C12-C44	<0.1 mg/kg	TM173		123	1070	1200	<0.1	30.3	<0.1
Aromatics >EC5-EC7	<0.01 mg/kg	TM089		<0.1 @	0.103 @	0.0805 @	<0.02 @	<0.02 @	<0.02 @
Aromatics >EC7-EC8	<0.01 mg/kg	TM089		0.143 @	0.125 @	0.104 @	<0.02 @	<0.02 @	<0.02 @
Aromatics >EC8-EC10	<0.01 mg/kg	TM089		0.19 @	1.01 @	0.715 @	<0.02 @	<0.02 @	<0.02 @
Aromatics >EC10-EC12	<0.01 mg/kg	TM089		0.724 @	10.3 @	7.1 @	<0.02 @	<0.02 @	<0.02 @
Aromatics >EC12-EC16	<0.1 mg/kg	TM173		3.84	80.4	81	<0.1	<0.1	<0.1
Aromatics >EC16-EC21	<0.1 mg/kg	TM173		15	144	135	<0.1	3.79	<0.1
Aromatics >EC21-EC35	<0.1 mg/kg	TM173		73.9	172	147	4.4	62.2	<0.1
Aromatics >EC35-EC44	<0.1 mg/kg	TM173		107	41.5	35.3	<0.1	20.5	<0.1
Aromatics >EC40-EC44	<0.1 mg/kg	TM173		52.1	14.6	12.2	<0.1	3.88	<0.1
Total Aromatics >EC12-EC44	<0.1 mg/kg	TM173		199	438	399	4.4	86.4	<0.1
Total Aliphatics & Aromatics >C5-C44	<0.1 mg/kg	TM173		324	1540	1620	4.4	117	<0.1

Validated

CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

TPH CWG (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-3+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	CPB7	CPB7	CPB7	CPB9	CPB9	CPB9
			Depth (m)	2.70 - 2.70	4.70 - 4.70	6.60 - 6.60	3.50 - 3.50	6.50 - 6.50	7.60 - 7.60
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	21/08/2019	21/08/2019	21/08/2019	19/08/2019	19/08/2019	19/08/2019
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	28/08/2019	28/08/2019	28/08/2019	28/08/2019	28/08/2019	28/08/2019
			SDG Ref	190828-36	190828-36	190828-36	190828-36	190828-36	190828-36
			Lab Sample No.(s)	20598824	20598832	20598839	20598847	20598859	20598882
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		84 @	110 @	109 @	88.2 @	70.1 @	89.4 @
GRO TOT (Moisture Corrected)	<0.1 mg/kg	TM089		0.677 @ M	<0.2 @ M	0.663 @ M	<0.2 @ M	<0.2 @ M	<0.2 @ M
Aliphatics >C5-C6	<0.01 mg/kg	TM089		0.0276 @	<0.02 @	0.0364 @	<0.02 @	<0.02 @	<0.02 @
Aliphatics >C6-C8	<0.01 mg/kg	TM089		0.0957 @	<0.02 @	0.0754 @	<0.02 @	<0.02 @	<0.02 @
Aliphatics >C8-C10	<0.01 mg/kg	TM089		0.149 @	<0.02 @	0.231 @	<0.02 @	<0.02 @	<0.02 @
Aliphatics >C10-C12	<0.01 mg/kg	TM089		0.182 @	<0.02 @	0.0988 @	<0.02 @	<0.02 @	<0.02 @
Aliphatics >C12-C16	<0.1 mg/kg	TM173		9.72	<0.1	<0.1	2.43	<0.1	<0.1
Aliphatics >C16-C21	<0.1 mg/kg	TM173		32.9	<0.1	<0.1	19	2.14	<0.1
Aliphatics >C21-C35	<0.1 mg/kg	TM173		75.5	<0.1	14.7	27	7.85	4.78
Aliphatics >C35-C44	<0.1 mg/kg	TM173		6.22	<0.1	<0.1	4.06	2.5	<0.1
Total Aliphatics >C12-C44	<0.1 mg/kg	TM173		124	<0.1	14.7	52.6	12.5	4.78
Aromatics >EC5-EC7	<0.01 mg/kg	TM089		<0.02 @	<0.02 @	<0.02 @	<0.02 @	<0.02 @	<0.02 @
Aromatics >EC7-EC8	<0.01 mg/kg	TM089		<0.02 @	<0.02 @	<0.02 @	<0.02 @	<0.02 @	<0.02 @
Aromatics >EC8-EC10	<0.01 mg/kg	TM089		0.0994 @	<0.02 @	0.153 @	<0.02 @	<0.02 @	<0.02 @
Aromatics >EC10-EC12	<0.01 mg/kg	TM089		0.121 @	<0.02 @	0.0676 @	<0.02 @	<0.02 @	<0.02 @
Aromatics >EC12-EC16	<0.1 mg/kg	TM173		3.86	<0.1	<0.1	5.29	<0.1	1.96
Aromatics >EC16-EC21	<0.1 mg/kg	TM173		20.5	<0.1	2.87	56	<0.1	11.2
Aromatics >EC21-EC35	<0.1 mg/kg	TM173		149	1.32	43	166	73.4	21.8
Aromatics >EC35-EC44	<0.1 mg/kg	TM173		25.7	<0.1	8.61	29.3	13.1	6.76
Aromatics >EC40-EC44	<0.1 mg/kg	TM173		6.29	<0.1	2.37	9.63	3.94	2.78
Total Aromatics >EC12-EC44	<0.1 mg/kg	TM173		199	1.32	54.5	256	86.5	41.7
Total Aliphatics & Aromatics >C5-C44	<0.1 mg/kg	TM173		324	1.58	70.6	309	99	46.5

CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

TPH CWG (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-3+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	CPB9	CPB11	CPB11	CPB11	CPB13	CPB13
			Depth (m)	8.60 - 8.60	3.50 - 3.50	5.50 - 5.50	9.50 - 9.50	10.10 - 10.10	2.20 - 2.20
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	19/08/2019	20/08/2019	20/08/2019	20/08/2019	22/08/2019	22/08/2019
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	28/08/2019	28/08/2019	28/08/2019	28/08/2019	28/08/2019	28/08/2019
			SDG Ref	190828-36	190828-36	190828-36	190828-36	190828-36	190828-36
			Lab Sample No.(s)	20598896	20598788	20598798	20598808	20598531	20598492
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		111 @	82 @	105 @	99.1 @	130 @	119 @
GRO TOT (Moisture Corrected)	<0.1 mg/kg	TM089		<0.2 @ M	<0.2 @ M	<0.2 @ M	<0.2 @ M	<0.2 @ M	<0.2 @ M
Aliphatics >C5-C6	<0.01 mg/kg	TM089		<0.02 @	<0.02 @	<0.02 @	<0.02 @	<0.02 @	<0.02 @
Aliphatics >C6-C8	<0.01 mg/kg	TM089		<0.02 @	<0.02 @	<0.02 @	<0.02 @	<0.02 @	<0.02 @
Aliphatics >C8-C10	<0.01 mg/kg	TM089		<0.02 @	<0.02 @	<0.02 @	<0.02 @	<0.02 @	<0.02 @
Aliphatics >C10-C12	<0.01 mg/kg	TM089		<0.02 @	<0.02 @	<0.02 @	<0.02 @	<0.02 @	<0.02 @
Aliphatics >C12-C16	<0.1 mg/kg	TM173		<0.1	0.869	<0.1	<0.1	<0.1	<0.1
Aliphatics >C16-C21	<0.1 mg/kg	TM173		<0.1	15.4	<0.1	8.29	<0.1	<0.1
Aliphatics >C21-C35	<0.1 mg/kg	TM173		<0.1	16.4	<0.1	7.24	<0.1	6.76
Aliphatics >C35-C44	<0.1 mg/kg	TM173		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Total Aliphatics >C12-C44	<0.1 mg/kg	TM173		<0.1	32.7	<0.1	15.5	<0.1	6.76
Aromatics >EC5-EC7	<0.01 mg/kg	TM089		<0.02 @	<0.02 @	<0.02 @	<0.02 @	<0.02 @	<0.02 @
Aromatics >EC7-EC8	<0.01 mg/kg	TM089		<0.02 @	<0.02 @	<0.02 @	<0.02 @	<0.02 @	<0.02 @
Aromatics >EC8-EC10	<0.01 mg/kg	TM089		<0.02 @	<0.02 @	<0.02 @	<0.02 @	<0.02 @	<0.02 @
Aromatics >EC10-EC12	<0.01 mg/kg	TM089		<0.02 @	<0.02 @	<0.02 @	<0.02 @	<0.02 @	<0.02 @
Aromatics >EC12-EC16	<0.1 mg/kg	TM173		<0.1	1.87	<0.1	0.474	<0.1	<0.1
Aromatics >EC16-EC21	<0.1 mg/kg	TM173		0.291	21.5	<0.1	3.64	<0.1	<0.1
Aromatics >EC21-EC35	<0.1 mg/kg	TM173		1.24	89.7	4.5	6.5	<0.1	9.41
Aromatics >EC35-EC44	<0.1 mg/kg	TM173		<0.1	15.6	<0.1	1.43	<0.1	0.341
Aromatics >EC40-EC44	<0.1 mg/kg	TM173		<0.1	5.64	<0.1	0.566	<0.1	<0.1
Total Aromatics >EC12-EC44	<0.1 mg/kg	TM173		1.53	129	4.5	12	<0.1	9.75
Total Aliphatics & Aromatics >C5-C44	<0.1 mg/kg	TM173		1.53	161	4.5	27.6	<0.1	16.5

Validated

CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

TPH CWG (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-3+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	CPB13	CPB18	CPB18	CPB18	CPBP101	CPBP101
			Depth (m)	4.20 - 4.20	0.30 - 0.30	0.50 - 0.50	1.90 - 1.90	0.30 - 0.30	1.00 - 1.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	22/08/2019	21/08/2019	21/08/2019	21/08/2019	20/08/2019	20/08/2019
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	28/08/2019	28/08/2019	28/08/2019	28/08/2019	28/08/2019	28/08/2019
			SDG Ref	190828-36	190828-36	190828-36	190828-36	190828-36	190828-36
			Lab Sample No.(s)	20598466	20598207	20598340	20598478	20598715	20598729
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		94.1 @	59.8 @	57.9 @	97 @	92 @	77 @
GRO TOT (Moisture Corrected)	<0.1 mg/kg	TM089		<0.2 @ M	0.576 @ #	0.618 @ #	1.42 @ M	4.54 @ M	48.6 @ M
Aliphatics >C5-C6	<0.01 mg/kg	TM089		<0.02 @	<0.02 @	<0.02 @	0.0456 @	0.0223 @	0.0209 @
Aliphatics >C6-C8	<0.01 mg/kg	TM089		<0.02 @	0.0254 @	0.0325 @	0.119 @	0.0797 @	0.262 @
Aliphatics >C8-C10	<0.01 mg/kg	TM089		<0.02 @	0.121 @	0.135 @	0.398 @	0.355 @	6.09 @
Aliphatics >C10-C12	<0.01 mg/kg	TM089		<0.02 @	0.0932 @	0.111 @	0.19 @	2.24 @	22.7 @
Aliphatics >C12-C16	<0.1 mg/kg	TM173		<0.1	8.44	4.59	1.66	253	482
Aliphatics >C16-C21	<0.1 mg/kg	TM173		<0.1	41	75.3	5.01	494	670
Aliphatics >C21-C35	<0.1 mg/kg	TM173		5.02	62.5	91.4	21.9	1860	1990
Aliphatics >C35-C44	<0.1 mg/kg	TM173		<0.1	28.8	16.6	5.61	358	224
Total Aliphatics >C12-C44	<0.1 mg/kg	TM173		5.02	141	188	34.2	2960	3370
Aromatics >EC5-EC7	<0.01 mg/kg	TM089		<0.02 @	0.149 @	0.131 @	0.23 @	0.0787 @	0.304 @
Aromatics >EC7-EC8	<0.01 mg/kg	TM089		<0.02 @	0.0315 @	0.0288 @	0.0389 @	0.0319 @	0.0902 @
Aromatics >EC8-EC10	<0.01 mg/kg	TM089		<0.02 @	0.0799 @	0.09 @	0.265 @	0.237 @	4.06 @
Aromatics >EC10-EC12	<0.01 mg/kg	TM089		<0.02 @	0.0617 @	0.075 @	0.127 @	1.5 @	15.1 @
Aromatics >EC12-EC16	<0.1 mg/kg	TM173		<0.1	6.8	11.4	1.47	47	152
Aromatics >EC16-EC21	<0.1 mg/kg	TM173		<0.1	36.6	83.6	4.9	171	285
Aromatics >EC21-EC35	<0.1 mg/kg	TM173		9.36	111	179	39.7	383	615
Aromatics >EC35-EC44	<0.1 mg/kg	TM173		<0.1	69.3	52.1	10.3	210	143
Aromatics >EC40-EC44	<0.1 mg/kg	TM173		<0.1	33.1	21.6	3.75	93.5	47.5
Total Aromatics >EC12-EC44	<0.1 mg/kg	TM173		9.36	224	326	56.3	811	1190
Total Aliphatics & Aromatics >C5-C44	<0.1 mg/kg	TM173		14.4	365	515	91.9	3780	4610

Validated

CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

TPH CWG (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-3+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	CPBP101	CPBR3	CPBR3	CPBR3	CPBR3	CPBR4
			Depth (m)	1.50 - 1.50	3.40 - 3.40	4.80 - 4.80	7.40 - 7.40	9.10 - 9.10	2.50 - 2.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	20/08/2019	20/08/2019	20/08/2019	20/08/2019	20/08/2019	21/08/2019
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	28/08/2019	28/08/2019	28/08/2019	28/08/2019	28/08/2019	28/08/2019
			SDG Ref	190828-36	190828-36	190828-36	190828-36	190828-36	190828-36
			Lab Sample No.(s)	20598741	20598911	20598922	20598930	20598817	20598217
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		80 @	100 @	87.3 @	95.4 @	94.7	74 @
GRO TOT (Moisture Corrected)	<0.1 mg/kg	TM089		37.7 @ M	1.16 @ M	<0.2 @ M	<0.2 @ M	<0.2 M	1.94 @ M
Aliphatics >C5-C6	<0.01 mg/kg	TM089		0.0225 @	0.0352 @	<0.02 @	<0.02 @	<0.02	0.0459 @
Aliphatics >C6-C8	<0.01 mg/kg	TM089		0.228 @	0.099 @	<0.02 @	<0.02 @	<0.02	0.136 @
Aliphatics >C8-C10	<0.01 mg/kg	TM089		4.34 @	0.165 @	<0.02 @	<0.02 @	<0.02	0.379 @
Aliphatics >C10-C12	<0.01 mg/kg	TM089		17.8 @	0.418 @	<0.02 @	<0.02 @	<0.02	0.675 @
Aliphatics >C12-C16	<0.1 mg/kg	TM173		538	40.8	16.5	<0.1	<0.1	<0.1
Aliphatics >C16-C21	<0.1 mg/kg	TM173		714	449	204	1.96	<0.1	<0.1
Aliphatics >C21-C35	<0.1 mg/kg	TM173		2080	148	146	7.19	<0.1	13.4
Aliphatics >C35-C44	<0.1 mg/kg	TM173		224	7.07	7.94	0.308	<0.1	<0.1
Total Aliphatics >C12-C44	<0.1 mg/kg	TM173		3560	645	375	9.46	<0.1	13.4
Aromatics >EC5-EC7	<0.01 mg/kg	TM089		0.367 @	0.0286 @	<0.02 @	<0.02 @	<0.02	<0.02 @
Aromatics >EC7-EC8	<0.01 mg/kg	TM089		0.091 @	0.022 @	<0.02 @	<0.02 @	<0.02	<0.02 @
Aromatics >EC8-EC10	<0.01 mg/kg	TM089		2.89 @	0.11 @	<0.02 @	<0.02 @	<0.02	0.253 @
Aromatics >EC10-EC12	<0.01 mg/kg	TM089		11.9 @	0.279 @	<0.02 @	<0.02 @	<0.02	0.451 @
Aromatics >EC12-EC16	<0.1 mg/kg	TM173		215	10.6	4.28	<0.1	<0.1	<0.1
Aromatics >EC16-EC21	<0.1 mg/kg	TM173		461	138	60.5	1.44	<0.1	4.1
Aromatics >EC21-EC35	<0.1 mg/kg	TM173		1060	245	242	27.3	<0.1	76
Aromatics >EC35-EC44	<0.1 mg/kg	TM173		256	36.9	35.8	4.17	<0.1	13.9
Aromatics >EC40-EC44	<0.1 mg/kg	TM173		84.4	9.73	8.71	<0.1	<0.1	4.32
Total Aromatics >EC12-EC44	<0.1 mg/kg	TM173		1990	430	342	32.9	<0.1	94
Total Aliphatics & Aromatics >C5-C44	<0.1 mg/kg	TM173		5590	1080	718	42.3	<0.1	109

Validated

CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

TPH CWG (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-3+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	CPBR4	CPBR4	CPBR4	CPBR9	CPBR9	CPBR9
			Depth (m)	3.50 - 3.50	7.50 - 7.50	9.40 - 9.40	3.10 - 3.10	4.20 - 4.20	8.80 - 8.80
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	21/08/2019	21/08/2019	21/08/2019	21/08/2019	21/08/2019	21/08/2019
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	28/08/2019	28/08/2019	28/08/2019	28/08/2019	28/08/2019	28/08/2019
			SDG Ref	190828-36	190828-36	190828-36	190828-36	190828-36	190828-36
			Lab Sample No.(s)	20598227	20598239	20598248	20598939	20598946	20598956
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		106 @	89.5 @	101 @	92.5 @	112 @	120 @
GRO TOT (Moisture Corrected)	<0.1 mg/kg	TM089		<0.2 @ M	<0.2 @ M	<0.2 @ M	<0.2 @ M	<0.2 @ M	<0.2 @ M
Aliphatics >C5-C6	<0.01 mg/kg	TM089		<0.02 @	<0.02 @	<0.02 @	<0.02 @	<0.02 @	<0.02 @
Aliphatics >C6-C8	<0.01 mg/kg	TM089		<0.02 @	<0.02 @	<0.02 @	<0.02 @	<0.02 @	<0.02 @
Aliphatics >C8-C10	<0.01 mg/kg	TM089		<0.02 @	<0.02 @	<0.02 @	<0.02 @	<0.02 @	<0.02 @
Aliphatics >C10-C12	<0.01 mg/kg	TM089		<0.02 @	<0.02 @	<0.02 @	<0.02 @	<0.02 @	<0.02 @
Aliphatics >C12-C16	<0.1 mg/kg	TM173		<0.1	0.62	<0.1	<0.1	<0.1	<0.1
Aliphatics >C16-C21	<0.1 mg/kg	TM173		3.19	7.09	<0.1	<0.1	<0.1	<0.1
Aliphatics >C21-C35	<0.1 mg/kg	TM173		18.5	31.1	<0.1	5.26	<0.1	9.79
Aliphatics >C35-C44	<0.1 mg/kg	TM173		<0.1	1.39	<0.1	<0.1	<0.1	1.48
Total Aliphatics >C12-C44	<0.1 mg/kg	TM173		21.6	40.2	<0.1	5.26	<0.1	11.3
Aromatics >EC5-EC7	<0.01 mg/kg	TM089		<0.02 @	<0.02 @	<0.02 @	<0.02 @	<0.02 @	<0.02 @
Aromatics >EC7-EC8	<0.01 mg/kg	TM089		<0.02 @	<0.02 @	<0.02 @	<0.02 @	<0.02 @	<0.02 @
Aromatics >EC8-EC10	<0.01 mg/kg	TM089		<0.02 @	<0.02 @	<0.02 @	<0.02 @	<0.02 @	<0.02 @
Aromatics >EC10-EC12	<0.01 mg/kg	TM089		<0.02 @	<0.02 @	<0.02 @	<0.02 @	<0.02 @	<0.02 @
Aromatics >EC12-EC16	<0.1 mg/kg	TM173		2.95	<0.1	<0.1	<0.1	<0.1	<0.1
Aromatics >EC16-EC21	<0.1 mg/kg	TM173		12.6	6.15	0.399	<0.1	<0.1	<0.1
Aromatics >EC21-EC35	<0.1 mg/kg	TM173		108	113	3.06	37	3.59	4.95
Aromatics >EC35-EC44	<0.1 mg/kg	TM173		11.6	31.8	1.85	2.74	<0.1	0.993
Aromatics >EC40-EC44	<0.1 mg/kg	TM173		<0.1	7.15	0.651	<0.1	<0.1	<0.1
Total Aromatics >EC12-EC44	<0.1 mg/kg	TM173		135	151	5.31	39.7	3.59	5.95
Total Aliphatics & Aromatics >C5-C44	<0.1 mg/kg	TM173		157	191	5.31	45	3.59	17.2

Validated

CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

TPH CWG (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
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*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-3+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	WS01	WS01	WS04	WS04	WS04	WS13
			Depth (m)	0.30 - 0.30	0.50 - 0.50	0.30 - 0.30	1.00 - 1.00	3.40 - 3.80	0.30 - 0.30
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	22/08/2019	22/08/2019	22/08/2019	22/08/2019	22/08/2019	22/08/2019
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	28/08/2019	28/08/2019	28/08/2019	28/08/2019	28/08/2019	28/08/2019
			SDG Ref	190828-36	190828-36	190828-36	190828-36	190828-36	190828-36
			Lab Sample No.(s)	20598388	20598407	20598362	20598372	20598505	20598264
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		39 3 @	39 3 @	73.9 @	92.8 @	75 @	59.3 3
GRO TOT (Moisture Corrected)	<0.1 mg/kg	TM089		0.337 3 @ #	0.665 3 @ #	0.738 @ M	41.3 @ M	<0.2 @ M	<0.2 3 #
Aliphatics >C5-C6	<0.01 mg/kg	TM089		<0.01 3 @	<0.01 3 @	0.0275 @	<0.02 @	<0.02 @	<0.02 3
Aliphatics >C6-C8	<0.01 mg/kg	TM089		0.0178 3 @	0.0334 3 @	0.0825 @	0.0752 @	<0.02 @	<0.02 3
Aliphatics >C8-C10	<0.01 mg/kg	TM089		0.03 3 @	0.0633 3 @	0.111 @	0.966 @	<0.02 @	<0.02 3
Aliphatics >C10-C12	<0.01 mg/kg	TM089		0.149 3 @	0.296 3 @	0.235 @	23.7 @	<0.02 @	<0.02 3
Aliphatics >C12-C16	<0.1 mg/kg	TM173		12.7	2.01	3.9	167	<0.1	1.34
Aliphatics >C16-C21	<0.1 mg/kg	TM173		99.1	35.5	14.5	254	<0.1	13.3
Aliphatics >C21-C35	<0.1 mg/kg	TM173		87.4	52.2	90	186	38.1	75.9
Aliphatics >C35-C44	<0.1 mg/kg	TM173		14.9	6.48	31	51.4	<0.1	26.6
Total Aliphatics >C12-C44	<0.1 mg/kg	TM173		214	96.2	140	659	38.1	117
Aromatics >EC5-EC7	<0.01 mg/kg	TM089		<0.01 3 @	0.015 3 @	0.022 @	0.0889 @	<0.02 @	<0.02 3
Aromatics >EC7-EC8	<0.01 mg/kg	TM089		<0.01 3 @	0.0104 3 @	0.0286 @	0.0262 @	<0.02 @	<0.02 3
Aromatics >EC8-EC10	<0.01 mg/kg	TM089		0.02 3 @	0.0426 3 @	0.0737 @	0.643 @	<0.02 @	<0.02 3
Aromatics >EC10-EC12	<0.01 mg/kg	TM089		0.0988 3 @	0.197 3 @	0.157 @	15.8 @	<0.02 @	<0.02 3
Aromatics >EC12-EC16	<0.1 mg/kg	TM173		144	85.7	5.51	66.7	2.11	6.07
Aromatics >EC16-EC21	<0.1 mg/kg	TM173		1110	568	30.9	320	8.97	70.2
Aromatics >EC21-EC35	<0.1 mg/kg	TM173		2040	1040	110	302	312	225
Aromatics >EC35-EC44	<0.1 mg/kg	TM173		487	252	59.5	97.6	23.5	69.1
Aromatics >EC40-EC44	<0.1 mg/kg	TM173		160	83.1	24.5	32.2	7.05	24.3
Total Aromatics >EC12-EC44	<0.1 mg/kg	TM173		3780	1940	206	786	347	370
Total Aliphatics & Aromatics >C5-C44	<0.1 mg/kg	TM173		4000	2040	346	1490	385	487

Validated

CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

TPH CWG (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-3+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	WS13	WS13	WS13	WS19	WS19	WS19
			Depth (m)	0.50 - 0.50	1.00 - 1.00	1.80 - 1.80	0.30 - 0.30	1.00 - 1.00	1.80 - 1.80
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	22/08/2019	22/08/2019	22/08/2019	22/08/2019	22/08/2019	22/08/2019
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	28/08/2019	28/08/2019	28/08/2019	28/08/2019	28/08/2019	28/08/2019
			SDG Ref	190828-36	190828-36	190828-36	190828-36	190828-36	190828-36
			Lab Sample No.(s)	20598278	20598286	20598295	20598310	20598327	20598351
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		81.8 @	98.4 @	104	97 @	88 @	105 @
GRO TOT (Moisture Corrected)	<0.1 mg/kg	TM089		<0.2 @ M	4.46 @ #	<0.2 M	0.36 @ M	0.897 @ M	<0.2 @ M
Aliphatics >C5-C6	<0.01 mg/kg	TM089		<0.02 @	0.022 @	<0.02	<0.02 @	<0.02 @	<0.02 @
Aliphatics >C6-C8	<0.01 mg/kg	TM089		<0.02 @	0.137 @	0.0239	0.0299 @	0.0616 @	<0.02 @
Aliphatics >C8-C10	<0.01 mg/kg	TM089		<0.02 @	0.422 @	0.0299	0.0555 @	0.0759 @	<0.02 @
Aliphatics >C10-C12	<0.01 mg/kg	TM089		<0.02 @	2.09 @	0.0876	0.132 @	0.417 @	<0.02 @
Aliphatics >C12-C16	<0.1 mg/kg	TM173		1.59	117	13	19.2	16	<0.1
Aliphatics >C16-C21	<0.1 mg/kg	TM173		18.1	825	80.6	289	85.3	8.57
Aliphatics >C21-C35	<0.1 mg/kg	TM173		71.2	120	22.9	152	28.2	9.11
Aliphatics >C35-C44	<0.1 mg/kg	TM173		23.1	3.35	2.37	48.5	5.44	<0.1
Total Aliphatics >C12-C44	<0.1 mg/kg	TM173		114	1070	119	509	135	17.7
Aromatics >EC5-EC7	<0.01 mg/kg	TM089		<0.02 @	0.114 @	<0.02	<0.02 @	<0.02 @	<0.02 @
Aromatics >EC7-EC8	<0.01 mg/kg	TM089		<0.02 @	<0.02 @	<0.02	<0.02 @	<0.02 @	<0.02 @
Aromatics >EC8-EC10	<0.01 mg/kg	TM089		<0.02 @	0.282 @	<0.02	0.0373 @	0.0506 @	<0.02 @
Aromatics >EC10-EC12	<0.01 mg/kg	TM089		<0.02 @	1.4 @	0.0577	0.0875 @	0.278 @	<0.02 @
Aromatics >EC12-EC16	<0.1 mg/kg	TM173		5.85	69	4.62	15.3	3.52	<0.1
Aromatics >EC16-EC21	<0.1 mg/kg	TM173		75.6	404	33.8	184	36.2	5.67
Aromatics >EC21-EC35	<0.1 mg/kg	TM173		252	184	96.1	176	65.1	50.5
Aromatics >EC35-EC44	<0.1 mg/kg	TM173		73.1	20.1	9.13	43.6	15.1	7.14
Aromatics >EC40-EC44	<0.1 mg/kg	TM173		25.2	5.84	1.71	14.5	3.79	2.7
Total Aromatics >EC12-EC44	<0.1 mg/kg	TM173		407	678	144	419	120	63.3
Total Aliphatics & Aromatics >C5-C44	<0.1 mg/kg	TM173		521	1750	263	929	256	81

Validated

CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

TPH CWG (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-3+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	WS20	WSBP104	WSBP104	WSBP104	WSBP105	WSBP105
			Depth (m)	1.80 - 1.80	0.30 - 0.30	1.00 - 1.00	1.80 - 1.80	0.30 - 0.30	1.00 - 1.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	22/08/2019	20/08/2019	20/08/2019	20/08/2019	20/08/2019	20/08/2019
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	28/08/2019	28/08/2019	28/08/2019	28/08/2019	28/08/2019	28/08/2019
			SDG Ref	190828-36	190828-36	190828-36	190828-36	190828-36	190828-36
			Lab Sample No.(s)	20598518	20598585	20598597	20598613	20598682	20598696
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		103 @	93.5 @	99.3 @	114 @	82.7 @	97 @
GRO TOT (Moisture Corrected)	<0.1 mg/kg	TM089		<0.2 @ M	<0.2 @ M	5.9 @ #	5.77 @ M	29.5 @ #	9.96 @ #
Aliphatics >C5-C6	<0.01 mg/kg	TM089		<0.02 @	<0.02 @	<0.02 @	0.0424 @	0.157 @	0.03 @
Aliphatics >C6-C8	<0.01 mg/kg	TM089		<0.02 @	<0.02 @	0.0232 @	0.144 @	0.59 @	0.157 @
Aliphatics >C8-C10	<0.01 mg/kg	TM089		<0.02 @	<0.02 @	0.473 @	0.79 @	7.93 @	1.95 @
Aliphatics >C10-C12	<0.01 mg/kg	TM089		<0.02 @	<0.02 @	2.82 @	2.46 @	5.89 @	3.52 @
Aliphatics >C12-C16	<0.1 mg/kg	TM173		<0.1	2.92	226	7.06	27.1	18.8
Aliphatics >C16-C21	<0.1 mg/kg	TM173		<0.1	19.9	424	15.9	75.4	50.7
Aliphatics >C21-C35	<0.1 mg/kg	TM173		<0.1	65.2	210	14	380	249
Aliphatics >C35-C44	<0.1 mg/kg	TM173		<0.1	7.77	28	1.51	73.3	55.9
Total Aliphatics >C12-C44	<0.1 mg/kg	TM173		<0.1	95.8	888	38.5	556	375
Aromatics >EC5-EC7	<0.01 mg/kg	TM089		<0.02 @	<0.02 @	0.0998 @	0.0628 @	3.22 @	0.402 @
Aromatics >EC7-EC8	<0.01 mg/kg	TM089		<0.02 @	<0.02 @	0.278 @	0.102 @	2.46 @	0.243 @
Aromatics >EC8-EC10	<0.01 mg/kg	TM089		<0.02 @	<0.02 @	0.316 @	0.526 @	5.29 @	1.3 @
Aromatics >EC10-EC12	<0.01 mg/kg	TM089		<0.02 @	<0.02 @	1.88 @	1.64 @	3.93 @	2.35 @
Aromatics >EC12-EC16	<0.1 mg/kg	TM173		<0.1	1.33	103	2.01	6.55	6.28
Aromatics >EC16-EC21	<0.1 mg/kg	TM173		<0.1	9.96	167	6.52	31.5	22.1
Aromatics >EC21-EC35	<0.1 mg/kg	TM173		4.12	46.6	155	46.9	112	82.5
Aromatics >EC35-EC44	<0.1 mg/kg	TM173		<0.1	21.3	66	8.26	44.5	47.7
Aromatics >EC40-EC44	<0.1 mg/kg	TM173		<0.1	8.84	27.1	2.37	18.3	21.1
Total Aromatics >EC12-EC44	<0.1 mg/kg	TM173		4.12	79.2	491	63.7	195	159
Total Aliphatics & Aromatics >C5-C44	<0.1 mg/kg	TM173		4.12	175	1380	108	780	543

Validated

CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

TPH CWG (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-3+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	WSBP105	WSBP108	WSBP108	WSBP108	WSBP108	WSBP108
			Depth (m)	1.40 - 1.40	0.30 - 0.30	1.00 - 1.00	1.50 - 1.50	2.10 - 2.50	3.40 - 4.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	20/08/2019	20/08/2019	20/08/2019	20/08/2019	20/08/2019	20/08/2019
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	28/08/2019	28/08/2019	28/08/2019	28/08/2019	28/08/2019	28/08/2019
			SDG Ref	190828-36	190828-36	190828-36	190828-36	190828-36	190828-36
			Lab Sample No.(s)	20598707	20598541	20598552	20598565	20598757	20598778
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		73 @	78 @	95.7 @	117 @	96.8 @	73.7 @
GRO TOT (Moisture Corrected)	<0.1 mg/kg	TM089		43.1 @ #	0.343 @ M	21.4 @ #	30.8 @ M	<0.2 @ M	<0.2 @ M
Aliphatics >C5-C6	<0.01 mg/kg	TM089		0.18 @	<0.02 @	0.138 @	0.0964 @	<0.02 @	<0.02 @
Aliphatics >C6-C8	<0.01 mg/kg	TM089		0.859 @	0.0351 @	0.488 @	0.653 @	0.0275 @	<0.02 @
Aliphatics >C8-C10	<0.01 mg/kg	TM089		11.9 @	0.0373 @	3.34 @	1.86 @	0.0537 @	<0.02 @
Aliphatics >C10-C12	<0.01 mg/kg	TM089		9.91 @	0.128 @	7.43 @	15.8 @	0.0603 @	<0.02 @
Aliphatics >C12-C16	<0.1 mg/kg	TM173		119	1.3	4.74	<0.1	<0.1	<0.1
Aliphatics >C16-C21	<0.1 mg/kg	TM173		270	4.7	2.63	<0.1	<0.1	<0.1
Aliphatics >C21-C35	<0.1 mg/kg	TM173		1320	21.5	2.56	3.31	<0.1	26.3
Aliphatics >C35-C44	<0.1 mg/kg	TM173		194	7.84	0.852	<0.1	<0.1	<0.1
Total Aliphatics >C12-C44	<0.1 mg/kg	TM173		1900	35.4	10.8	3.31	<0.1	26.3
Aromatics >EC5-EC7	<0.01 mg/kg	TM089		3.21 @	<0.02 @	2.67 @	0.534 @	<0.02 @	<0.02 @
Aromatics >EC7-EC8	<0.01 mg/kg	TM089		2.54 @	<0.02 @	0.151 @	<0.02 @	<0.02 @	<0.02 @
Aromatics >EC8-EC10	<0.01 mg/kg	TM089		7.92 @	0.0253 @	2.23 @	1.24 @	0.0354 @	<0.02 @
Aromatics >EC10-EC12	<0.01 mg/kg	TM089		6.61 @	0.0856 @	4.95 @	10.6 @	0.0406 @	<0.02 @
Aromatics >EC12-EC16	<0.1 mg/kg	TM173		35.7	2.17	6.82	<0.1	<0.1	0.219
Aromatics >EC16-EC21	<0.1 mg/kg	TM173		155	10.1	10.3	<0.1	<0.1	6.08
Aromatics >EC21-EC35	<0.1 mg/kg	TM173		411	43.5	18.5	20.1	0.321	139
Aromatics >EC35-EC44	<0.1 mg/kg	TM173		102	20.9	0.689	2	<0.1	31.9
Aromatics >EC40-EC44	<0.1 mg/kg	TM173		36.2	8.73	<0.1	<0.1	<0.1	11
Total Aromatics >EC12-EC44	<0.1 mg/kg	TM173		704	76.7	36.3	22.1	0.321	177
Total Aliphatics & Aromatics >C5-C44	<0.1 mg/kg	TM173		2650	112	68.5	56.2	0.538	204

Validated

CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

TPH CWG (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-3+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	WSBP109	WSBP109	WSBP109			
			Depth (m)	0.30 - 0.30	1.00 - 1.00	1.60 - 1.60			
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)			
			Date Sampled	21/08/2019	21/08/2019	21/08/2019			
			Sample Time	00:00	00:00	00:00			
			Date Received	28/08/2019	28/08/2019	28/08/2019			
			SDG Ref	190828-36	190828-36	190828-36			
			Lab Sample No.(s)	20598625	20598767	20598871			
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		95 @	80 @	96 @			
GRO TOT (Moisture Corrected)	<0.1 mg/kg	TM089		<0.2 @ M	31.4 @ #	25.2 @ M			
Aliphatics >C5-C6	<0.01 mg/kg	TM089		<0.02 @	0.215 @	0.0588 @			
Aliphatics >C6-C8	<0.01 mg/kg	TM089		<0.02 @	0.801 @	0.137 @			
Aliphatics >C8-C10	<0.01 mg/kg	TM089		0.0216 @	5.93 @	4.03 @			
Aliphatics >C10-C12	<0.01 mg/kg	TM089		0.0205 @	11 @	10.8 @			
Aliphatics >C12-C16	<0.1 mg/kg	TM173		0.195	41.9	<0.1			
Aliphatics >C16-C21	<0.1 mg/kg	TM173		0.841	76.8	<0.1			
Aliphatics >C21-C35	<0.1 mg/kg	TM173		97.7	22.5	1.81			
Aliphatics >C35-C44	<0.1 mg/kg	TM173		68.8	0.749	<0.1			
Total Aliphatics >C12-C44	<0.1 mg/kg	TM173		168	142	1.81			
Aromatics >EC5-EC7	<0.01 mg/kg	TM089		<0.02 @	1.99 @	0.306 @			
Aromatics >EC7-EC8	<0.01 mg/kg	TM089		<0.02 @	0.258 @	<0.02 @			
Aromatics >EC8-EC10	<0.01 mg/kg	TM089		<0.02 @	3.95 @	2.69 @			
Aromatics >EC10-EC12	<0.01 mg/kg	TM089		<0.02 @	7.3 @	7.18 @			
Aromatics >EC12-EC16	<0.1 mg/kg	TM173		0.502	89.2	0.637			
Aromatics >EC16-EC21	<0.1 mg/kg	TM173		3.93	153	1.1			
Aromatics >EC21-EC35	<0.1 mg/kg	TM173		125	150	17.6			
Aromatics >EC35-EC44	<0.1 mg/kg	TM173		119	10.8	4.49			
Aromatics >EC40-EC44	<0.1 mg/kg	TM173		49.4	2.81	1.65			
Total Aromatics >EC12-EC44	<0.1 mg/kg	TM173		248	403	23.8			
Total Aliphatics & Aromatics >C5-C44	<0.1 mg/kg	TM173		415	577	50.8			

Validated

CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

VOC MS (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-3+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	BHCP105	BHCP105	BHCP105	CPB5	CPB5	CPB5
			Depth (m)	0.30 - 0.30	0.50 - 0.50	1.00 - 1.00	4.00 - 4.00	7.80 - 7.80	8.70 - 8.70
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	20/08/2019	20/08/2019	20/08/2019	22/08/2019	22/08/2019	22/08/2019
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	28/08/2019	28/08/2019	28/08/2019	28/08/2019	28/08/2019	28/08/2019
			SDG Ref	190828-36	190828-36	190828-36	190828-36	190828-36	190828-36
			Lab Sample No.(s)	20598637	20598655	20598666	20598446	20598438	20598427
			AGS Reference						
Dibromofluoromethane**	%	TM116		106 @	103 @	102 @	111 @	119 @	113 @
Toluene-d8**	%	TM116		98.1 @	96.6 @	98.5 @	98.9 @	95.4 @	99.9 @
4-Bromofluorobenzene**	%	TM116		96.7 @	95.1 @	96.3 @	92.2 @	83.5 @	101 @
Methyl Tertiary Butyl Ether	<0.01 mg/kg	TM116		<0.1 @ M	<0.1 @ M	<0.1 @ M	<0.1 @ M	<0.1 @ M	<0.1 @ M
Benzene	<0.009 mg/kg	TM116		<0.09 @ M	<0.09 @ M	<0.09 @ M	<0.09 @ M	<0.09 @ M	<0.09 @ M
Toluene	<0.007 mg/kg	TM116		0.197 @ M	0.0798 @ M	0.136 @ M	<0.07 @ M	<0.07 @ M	<0.07 @ M
Ethylbenzene	<0.004 mg/kg	TM116		<0.04 @ M	<0.04 @ M	<0.04 @ M	<0.04 @ M	<0.04 @ M	<0.04 @ M
p/m-Xylene	<0.01 mg/kg	TM116		<0.1 @ #	<0.1 @ #	<0.1 @ #	<0.1 @ #	<0.1 @ #	<0.1 @ #
o-Xylene	<0.01 mg/kg	TM116		<0.1 @ M	<0.1 @ M	<0.1 @ M	<0.1 @ M	<0.1 @ M	<0.1 @ M
Sum of Detected Xylenes	<0.02 mg/kg	TM116		<0.2 @	<0.2 @	<0.2 @	<0.2 @	<0.2 @	<0.2 @
Sum of BTEX	<0.04 mg/kg	TM116		<0.4 @	<0.4 @	<0.4 @	<0.4 @	<0.4 @	<0.4 @

Validated

CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

VOC MS (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-3+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	CPB7	CPB7	CPB7	CPB9	CPB9	CPB9
			Depth (m)	2.70 - 2.70	4.70 - 4.70	6.60 - 6.60	3.50 - 3.50	6.50 - 6.50	7.60 - 7.60
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	21/08/2019	21/08/2019	21/08/2019	19/08/2019	19/08/2019	19/08/2019
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	28/08/2019	28/08/2019	28/08/2019	28/08/2019	28/08/2019	28/08/2019
			SDG Ref	190828-36	190828-36	190828-36	190828-36	190828-36	190828-36
			Lab Sample No.(s)	20598824	20598832	20598839	20598847	20598859	20598882
			AGS Reference						
Dibromofluoromethane**	%	TM116		108 @	108 @	110 @	121 @	117 @	115 @
Toluene-d8**	%	TM116		90.2 @	96 @	88.6 @	93 @	88.7 @	97.5 @
4-Bromofluorobenzene**	%	TM116		74.5 @	92.6 @	72.7 @	80.3 @	72.3 @	89.4 @
Methyl Tertiary Butyl Ether	<0.01 mg/kg	TM116		<0.1 @ M	<0.1 @ M	<0.1 @ M	<0.1 @ M	<0.1 @ M	<0.1 @ M
Benzene	<0.009 mg/kg	TM116		<0.09 @ M	<0.09 @ M	<0.09 @ M	<0.09 @ M	<0.09 @ M	<0.09 @ M
Toluene	<0.007 mg/kg	TM116		<0.07 @ M	<0.07 @ M	<0.07 @ M	<0.07 @ M	<0.07 @ M	<0.07 @ M
Ethylbenzene	<0.004 mg/kg	TM116		<0.04 @ M	<0.04 @ M	<0.04 @ M	<0.04 @ M	<0.04 @ M	<0.04 @ M
p/m-Xylene	<0.01 mg/kg	TM116		<0.1 @ #	<0.1 @ #	<0.1 @ #	<0.1 @ #	<0.1 @ #	<0.1 @ #
o-Xylene	<0.01 mg/kg	TM116		<0.1 @ M	<0.1 @ M	<0.1 @ M	<0.1 @ M	<0.1 @ M	<0.1 @ M
Sum of Detected Xylenes	<0.02 mg/kg	TM116		<0.2 @	<0.2 @	<0.2 @	<0.2 @	<0.2 @	<0.2 @
Sum of BTEX	<0.04 mg/kg	TM116		<0.4 @	<0.4 @	<0.4 @	<0.4 @	<0.4 @	<0.4 @

Validated

CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

VOC MS (S)

Results Legend	
#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-3+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	CPB9	CPB11	CPB11	CPB11	CPB13	CPB13
			Depth (m)	8.60 - 8.60	3.50 - 3.50	5.50 - 5.50	9.50 - 9.50	10.10 - 10.10	2.20 - 2.20
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	19/08/2019	20/08/2019	20/08/2019	20/08/2019	22/08/2019	22/08/2019
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	28/08/2019	28/08/2019	28/08/2019	28/08/2019	28/08/2019	28/08/2019
			SDG Ref	190828-36	190828-36	190828-36	190828-36	190828-36	190828-36
			Lab Sample No.(s)	20598896	20598788	20598798	20598808	20598531	20598492
			AGS Reference						
Dibromofluoromethane**	%	TM116		121 @	109 @	111 @	119 @	138 @	109 @
Toluene-d8**	%	TM116		97.6 @	96.8 @	98.3 @	98.6 @	97.1 @	98.4 @
4-Bromofluorobenzene**	%	TM116		95.8 @	91.7 @	95.9 @	98.3 @	101 @	96.4 @
Methyl Tertiary Butyl Ether	<0.01 mg/kg	TM116		<0.1 @ M	<0.1 @ M	<0.1 @ M	<0.1 @ M	<0.1 @ M	<0.1 @ M
Benzene	<0.009 mg/kg	TM116		<0.09 @ M	<0.09 @ M	<0.09 @ M	<0.09 @ M	<0.09 @ M	<0.09 @ M
Toluene	<0.007 mg/kg	TM116		<0.07 @ M	<0.07 @ M	<0.07 @ M	<0.07 @ M	<0.07 @ M	<0.07 @ M
Ethylbenzene	<0.004 mg/kg	TM116		<0.04 @ M	<0.04 @ M	<0.04 @ M	<0.04 @ M	<0.04 @ M	<0.04 @ M
p/m-Xylene	<0.01 mg/kg	TM116		<0.1 @ #	<0.1 @ #	<0.1 @ #	<0.1 @ #	<0.1 @ #	<0.1 @ #
o-Xylene	<0.01 mg/kg	TM116		<0.1 @ M	<0.1 @ M	<0.1 @ M	<0.1 @ M	<0.1 @ M	<0.1 @ M
Sum of Detected Xylenes	<0.02 mg/kg	TM116		<0.2 @	<0.2 @	<0.2 @	<0.2 @	<0.2 @	<0.2 @
Sum of BTEX	<0.04 mg/kg	TM116		<0.4 @	<0.4 @	<0.4 @	<0.4 @	<0.4 @	<0.4 @

Validated

CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

VOC MS (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-3+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	CPB13	CPB18	CPB18	CPB18	CPBP101	CPBP101
			Depth (m)	4.20 - 4.20	0.30 - 0.30	0.50 - 0.50	1.90 - 1.90	0.30 - 0.30	1.00 - 1.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	22/08/2019	21/08/2019	21/08/2019	21/08/2019	20/08/2019	20/08/2019
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	28/08/2019	28/08/2019	28/08/2019	28/08/2019	28/08/2019	28/08/2019
			SDG Ref	190828-36	190828-36	190828-36	190828-36	190828-36	190828-36
			Lab Sample No.(s)	20598466	20598207	20598340	20598478	20598715	20598729
			AGS Reference						
Dibromofluoromethane**	%	TM116		117 @	108 @	104 @	106 @	104 @	102 @
Toluene-d8**	%	TM116		97.8 @	93.4 @	92 @	97.5 @	90.9 @	92.8 @
4-Bromofluorobenzene**	%	TM116		94.6 @	84.7 @	77.7 @	93.3 @	85 @	90.1 @
Methyl Tertiary Butyl Ether	<0.01 mg/kg	TM116		<0.1 @ M	<0.1 @ M	<0.1 @ M	<0.1 @ M	<0.1 @ M	<0.1 @ M
Benzene	<0.009 mg/kg	TM116		<0.09 @ M	0.164 @ M	0.312 @ M	0.155 @ M	<0.09 @ M	0.342 @ M
Toluene	<0.007 mg/kg	TM116		<0.07 @ M	0.124 @ M	0.1 @ M	<0.07 @ M	<0.07 @ M	0.0772 @ M
Ethylbenzene	<0.004 mg/kg	TM116		<0.04 @ M	<0.04 @ M	0.0731 @ M	<0.04 @ M	<0.04 @ M	<0.04 @ M
p/m-Xylene	<0.01 mg/kg	TM116		<0.1 @ #	0.156 @ #	0.248 @ #	<0.1 @ #	<0.1 @ #	<0.1 @ #
o-Xylene	<0.01 mg/kg	TM116		<0.1 @ M	<0.1 @ M	<0.1 @ M	<0.1 @ M	<0.1 @ M	<0.1 @ M
Sum of Detected Xylenes	<0.02 mg/kg	TM116		<0.2 @	<0.2 @	0.248 @	<0.2 @	<0.2 @	<0.2 @
Sum of BTEX	<0.04 mg/kg	TM116		<0.4 @	0.816 @	0.968 @	<0.4 @	<0.4 @	<0.4 @

Validated

CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

VOC MS (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-3+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	CPBP101	CPBR3	CPBR3	CPBR3	CPBR3	CPBR4
			Depth (m)	1.50 - 1.50	3.40 - 3.40	4.80 - 4.80	7.40 - 7.40	9.10 - 9.10	2.50 - 2.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	20/08/2019	20/08/2019	20/08/2019	20/08/2019	20/08/2019	21/08/2019
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	28/08/2019	28/08/2019	28/08/2019	28/08/2019	28/08/2019	28/08/2019
			SDG Ref	190828-36	190828-36	190828-36	190828-36	190828-36	190828-36
			Lab Sample No.(s)	20598741	20598911	20598922	20598930	20598817	20598217
			AGS Reference						
Dibromofluoromethane**	%	TM116		100 @	106 @	106 @	105 @	103 @	111 @
Toluene-d8**	%	TM116		92.9 @	96.6 @	92.7 @	95.8 @	99.3 @	97.4 @
4-Bromofluorobenzene**	%	TM116		87.9 @	86.7 @	81.4 @	85.9 @	99 @	93 @
Methyl Tertiary Butyl Ether	<0.01 mg/kg	TM116		<0.1 @ M	<0.1 @ M	<0.1 @ M	<0.1 @ M	<0.1 @ M	<0.1 @ M
Benzene	<0.009 mg/kg	TM116		0.269 @ M	<0.09 @ M	<0.09 @ M	<0.09 @ M	<0.09 @ M	<0.09 @ M
Toluene	<0.007 mg/kg	TM116		<0.07 @ M	<0.07 @ M	<0.07 @ M	<0.07 @ M	<0.07 @ M	<0.07 @ M
Ethylbenzene	<0.004 mg/kg	TM116		<0.04 @ M	<0.04 @ M	<0.04 @ M	<0.04 @ M	<0.04 @ M	<0.04 @ M
p/m-Xylene	<0.01 mg/kg	TM116		<0.1 @ #	<0.1 @ #	<0.1 @ #	<0.1 @ #	<0.1 @ #	<0.1 @ #
o-Xylene	<0.01 mg/kg	TM116		<0.1 @ M	<0.1 @ M	<0.1 @ M	<0.1 @ M	<0.1 @ M	<0.1 @ M
Sum of Detected Xylenes	<0.02 mg/kg	TM116		<0.2 @	<0.2 @	<0.2 @	<0.2 @	<0.2 @	<0.2 @
Sum of BTEX	<0.04 mg/kg	TM116		<0.4 @	<0.4 @	<0.4 @	<0.4 @	<0.4 @	<0.4 @

Validated

CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

VOC MS (S)

Results Legend	
#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-3+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	CPBR4	CPBR4	CPBR4	CPBR9	CPBR9	CPBR9
			Depth (m)	3.50 - 3.50	7.50 - 7.50	9.40 - 9.40	3.10 - 3.10	4.20 - 4.20	8.80 - 8.80
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	21/08/2019	21/08/2019	21/08/2019	21/08/2019	21/08/2019	21/08/2019
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	28/08/2019	28/08/2019	28/08/2019	28/08/2019	28/08/2019	28/08/2019
			SDG Ref	190828-36	190828-36	190828-36	190828-36	190828-36	190828-36
			Lab Sample No.(s)	20598227	20598239	20598248	20598939	20598946	20598956
			AGS Reference						
Dibromofluoromethane**	%	TM116		119 @	108 @	111 @	113 @	111 @	110 @
Toluene-d8**	%	TM116		90.2 @	96 @	96.8 @	87.2 @	98.3 @	100 @
4-Bromofluorobenzene**	%	TM116		74.2 @	86.6 @	102 @	71.3 @	97.4 @	98.1 @
Methyl Tertiary Butyl Ether	<0.01 mg/kg	TM116		<0.1 @ M	<0.2 @ M	<0.1 @ M	<0.1 @ M	<0.1 @ M	<0.2 @ M
Benzene	<0.009 mg/kg	TM116		<0.09 @ M	<0.18 @ M	<0.09 @ M	<0.09 @ M	<0.09 @ M	<0.18 @ M
Toluene	<0.007 mg/kg	TM116		<0.07 @ M	<0.14 @ M	<0.07 @ M	<0.07 @ M	<0.07 @ M	<0.14 @ M
Ethylbenzene	<0.004 mg/kg	TM116		<0.04 @ M	<0.08 @ M	<0.04 @ M	<0.04 @ M	<0.04 @ M	<0.08 @ M
p/m-Xylene	<0.01 mg/kg	TM116		<0.1 @ #	<0.2 @ #	<0.1 @ #	<0.1 @ #	<0.1 @ #	<0.2 @ #
o-Xylene	<0.01 mg/kg	TM116		<0.1 @ M	<0.2 @ M	<0.1 @ M	<0.1 @ M	<0.1 @ M	<0.2 @ M
Sum of Detected Xylenes	<0.02 mg/kg	TM116		<0.2 @	<0.4 @	<0.2 @	<0.2 @	<0.2 @	<0.4 @
Sum of BTEX	<0.04 mg/kg	TM116		<0.4 @	<0.8 @	<0.4 @	<0.4 @	<0.4 @	<0.8 @

CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

VOC MS (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-3+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	WS01	WS01	WS04	WS04	WS04	WS13
			Depth (m)	0.30 - 0.30	0.50 - 0.50	0.30 - 0.30	1.00 - 1.00	3.40 - 3.80	0.30 - 0.30
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	22/08/2019	22/08/2019	22/08/2019	22/08/2019	22/08/2019	22/08/2019
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	28/08/2019	28/08/2019	28/08/2019	28/08/2019	28/08/2019	28/08/2019
			SDG Ref	190828-36	190828-36	190828-36	190828-36	190828-36	190828-36
			Lab Sample No.(s)	20598388	20598407	20598362	20598372	20598505	20598264
			AGS Reference						
Dibromofluoromethane**	%	TM116		91.2 @	96.8 @	97.6 @	117 @	126 @	97.9 @
Toluene-d8**	%	TM116		95 @	95.4 @	94.3 @	98.1 @	86.2 @	92.2 @
4-Bromofluorobenzene**	%	TM116		75.9 @	77.9 @	79.4 @	84.9 @	75 @	75.1 @
Methyl Tertiary Butyl Ether	<0.01 mg/kg	TM116		<0.1 @ M	<0.1 @ M	<0.1 @ M	<0.1 @ M	<0.1 @ M	<0.1 @ M
Benzene	<0.009 mg/kg	TM116		<0.09 @ M	<0.09 @ M	<0.09 @ M	<0.09 @ M	<0.09 @ M	<0.09 @ M
Toluene	<0.007 mg/kg	TM116		<0.07 @ M	<0.07 @ M	<0.07 @ M	<0.07 @ M	<0.07 @ M	<0.07 @ M
Ethylbenzene	<0.004 mg/kg	TM116		<0.04 @ M	<0.04 @ M	<0.04 @ M	<0.04 @ M	<0.04 @ M	<0.04 @ M
p/m-Xylene	<0.01 mg/kg	TM116		<0.1 @ #	<0.1 @ #	<0.1 @ #	<0.1 @ #	<0.1 @ #	<0.1 @ #
o-Xylene	<0.01 mg/kg	TM116		<0.1 @ M	<0.1 @ M	<0.1 @ M	<0.1 @ M	<0.1 @ M	<0.1 @ M
Sum of Detected Xylenes	<0.02 mg/kg	TM116		<0.2 @	<0.2 @	<0.2 @	<0.2 @	<0.2 @	<0.2 @
Sum of BTEX	<0.04 mg/kg	TM116		<0.4 @	<0.4 @	<0.4 @	<0.4 @	<0.4 @	<0.4 @

Validated

CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

VOC MS (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-3+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	WS13	WS13	WS13	WS19	WS19	WS19
			Depth (m)	0.50 - 0.50	1.00 - 1.00	1.80 - 1.80	0.30 - 0.30	1.00 - 1.00	1.80 - 1.80
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	22/08/2019	22/08/2019	22/08/2019	22/08/2019	22/08/2019	22/08/2019
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	28/08/2019	28/08/2019	28/08/2019	28/08/2019	28/08/2019	28/08/2019
			SDG Ref	190828-36	190828-36	190828-36	190828-36	190828-36	190828-36
			Lab Sample No.(s)	20598278	20598286	20598295	20598310	20598327	20598351
			AGS Reference						
Dibromofluoromethane**	%	TM116		95 @	112 @	106 @	121 @	120 @	111 @
Toluene-d8**	%	TM116		91.8 @	98.1 @	97.3 @	94.6 @	95.2 @	97.9 @
4-Bromofluorobenzene**	%	TM116		79.3 @	85.4 @	94 @	84.9 @	86 @	97.5 @
Methyl Tertiary Butyl Ether	<0.01 mg/kg	TM116		<0.1 @ M	<0.1 @ #	<0.2 @ M	<0.1 @ M	<0.1 @ M	<0.1 @ M
Benzene	<0.009 mg/kg	TM116		<0.09 @ M	0.168 @ #	<0.18 @ M	<0.09 @ M	<0.09 @ M	<0.09 @ M
Toluene	<0.007 mg/kg	TM116		<0.07 @ M	<0.07 @ #	<0.14 @ M	<0.07 @ M	<0.07 @ M	<0.07 @ M
Ethylbenzene	<0.004 mg/kg	TM116		<0.04 @ M	<0.04 @ #	<0.08 @ M	<0.04 @ M	<0.04 @ M	<0.04 @ M
p/m-Xylene	<0.01 mg/kg	TM116		<0.1 @ #	<0.1 @ #	<0.2 @ #	<0.1 @ #	<0.1 @ #	<0.1 @ #
o-Xylene	<0.01 mg/kg	TM116		<0.1 @ M	<0.1 @ #	<0.2 @ M	<0.1 @ M	<0.1 @ M	<0.1 @ M
Sum of Detected Xylenes	<0.02 mg/kg	TM116		<0.2 @	<0.2 @	<0.4 @	<0.2 @	<0.2 @	<0.2 @
Sum of BTEX	<0.04 mg/kg	TM116		<0.4 @	<0.4 @	<0.8 @	<0.4 @	<0.4 @	<0.4 @

Validated

CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

VOC MS (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-3+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	WS20	WSBP104	WSBP104	WSBP104	WSBP105	WSBP105
			Depth (m)	1.80 - 1.80	0.30 - 0.30	1.00 - 1.00	1.80 - 1.80	0.30 - 0.30	1.00 - 1.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	22/08/2019	20/08/2019	20/08/2019	20/08/2019	20/08/2019	20/08/2019
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	28/08/2019	28/08/2019	28/08/2019	28/08/2019	28/08/2019	28/08/2019
			SDG Ref	190828-36	190828-36	190828-36	190828-36	190828-36	190828-36
			Lab Sample No.(s)	20598518	20598585	20598597	20598613	20598682	20598696
			AGS Reference						
Dibromofluoromethane**	%	TM116		115 @	104 @	105 @	104 @	105 @	106 @
Toluene-d8**	%	TM116		100 @	97.4 @	96 @	97.3 @	94.5 @	95.1 @
4-Bromofluorobenzene**	%	TM116		97.9 @	98.1 @	95.5 @	94.5 @	92 @	90.9 @
Methyl Tertiary Butyl Ether	<0.01 mg/kg	TM116		<0.1 @ M	<0.1 @ M	<0.1 @ #	<0.1 @ M	<0.1 @ #	<0.1 @ #
Benzene	<0.009 mg/kg	TM116		<0.09 @ M	<0.09 @ M	<0.09 @ #	<0.09 @ M	1.08 @ #	0.647 @ #
Toluene	<0.007 mg/kg	TM116		<0.07 @ M	<0.07 @ M	<0.07 @ #	<0.07 @ M	1.07 @ #	0.239 @ #
Ethylbenzene	<0.004 mg/kg	TM116		<0.04 @ M	<0.04 @ M	<0.04 @ #	<0.04 @ M	0.413 @ #	0.153 @ #
p/m-Xylene	<0.01 mg/kg	TM116		<0.1 @ #	<0.1 @ #	<0.1 @ #	<0.1 @ #	1.62 @ #	0.406 @ #
o-Xylene	<0.01 mg/kg	TM116		<0.1 @ M	<0.1 @ M	<0.1 @ #	<0.1 @ M	0.461 @ #	0.11 @ #
Sum of Detected Xylenes	<0.02 mg/kg	TM116		<0.2 @	<0.2 @	<0.2 @	<0.2 @	2.08 @	0.516 @
Sum of BTEX	<0.04 mg/kg	TM116		<0.4 @	<0.4 @	<0.4 @	<0.4 @	5.43 @	1.39 @

Validated

CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

VOC MS (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-3+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	WSBP105	WSBP108	WSBP108	WSBP108	WSBP108	WSBP108
			Depth (m)	1.40 - 1.40	0.30 - 0.30	1.00 - 1.00	1.50 - 1.50	2.10 - 2.50	3.40 - 4.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	20/08/2019	20/08/2019	20/08/2019	20/08/2019	20/08/2019	20/08/2019
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	28/08/2019	28/08/2019	28/08/2019	28/08/2019	28/08/2019	28/08/2019
			SDG Ref	190828-36	190828-36	190828-36	190828-36	190828-36	190828-36
			Lab Sample No.(s)	20598707	20598541	20598552	20598565	20598757	20598778
			AGS Reference						
Dibromofluoromethane**	%	TM116		105 @	106 @	102 @	103 @	124 @	122 @
Toluene-d8**	%	TM116		94.3 @	98.1 @	96.9 @	97 @	99.8 @	92.4 @
4-Bromofluorobenzene**	%	TM116		90.9 @	97.2 @	96.4 @	93.6 @	97.9 @	82.8 @
Methyl Tertiary Butyl Ether	<0.01 mg/kg	TM116		<0.1 @ #	<0.1 @ M	<0.1 @ #	<0.1 @ M	<0.1 @ M	<0.1 @ M
Benzene	<0.009 mg/kg	TM116		1.33 @ #	0.108 @ M	1.15 @ #	0.231 @ M	<0.09 @ M	<0.09 @ M
Toluene	<0.007 mg/kg	TM116		0.195 @ #	<0.07 @ M	<0.07 @ #	<0.07 @ M	<0.07 @ M	<0.07 @ M
Ethylbenzene	<0.004 mg/kg	TM116		0.0841 @ #	<0.04 @ M	0.146 @ #	0.089 @ M	0.107 @ M	<0.04 @ M
p/m-Xylene	<0.01 mg/kg	TM116		0.208 @ #	<0.1 @ #	<0.1 @ #	<0.1 @ #	<0.1 @ #	<0.1 @ #
o-Xylene	<0.01 mg/kg	TM116		<0.1 @ #	<0.1 @ M	<0.1 @ #	<0.1 @ M	<0.1 @ M	<0.1 @ M
Sum of Detected Xylenes	<0.02 mg/kg	TM116		0.208 @	<0.2 @	<0.2 @	<0.2 @	<0.2 @	<0.2 @
Sum of BTEX	<0.04 mg/kg	TM116		0.965 @	<0.4 @	1.55 @	<0.4 @	<0.4 @	<0.4 @

Validated

CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

VOC MS (S)

Results Legend	
#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-3+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.					
			WSBP109	WSBP109	WSBP109			
			Depth (m)	0.30 - 0.30	1.00 - 1.00	1.60 - 1.60		
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)		
			Date Sampled	21/08/2019	21/08/2019	21/08/2019		
			Sample Time	00:00	00:00	00:00		
			Date Received	28/08/2019	28/08/2019	28/08/2019		
			SDG Ref	190828-36	190828-36	190828-36		
			Lab Sample No.(s)	20598625	20598767	20598871		
			AGS Reference					
Dibromofluoromethane**	%	TM116	107 @	108 @	108 @			
Toluene-d8**	%	TM116	95.3 @	96.3 @	98.3 @			
4-Bromofluorobenzene**	%	TM116	94.1 @	90 @	95.8 @			
Methyl Tertiary Butyl Ether	<0.01 mg/kg	TM116	<0.1 @ M	<0.1 @ M	<0.1 @ M			
Benzene	<0.009 mg/kg	TM116	0.199 @ M	3.21 @ M	0.254 @ M			
Toluene	<0.007 mg/kg	TM116	<0.07 @ M	0.348 @ #	<0.07 @ M			
Ethylbenzene	<0.004 mg/kg	TM116	0.0733 @ M	0.594 @ #	0.264 @ M			
p/m-Xylene	<0.01 mg/kg	TM116	0.177 @ #	1.82 @ #	1.14 @ #			
o-Xylene	<0.01 mg/kg	TM116	<0.1 @ M	0.248 @ #	<0.1 @ M			
Sum of Detected Xylenes	<0.02 mg/kg	TM116	<0.2 @	2.07 @	1.14 @			
Sum of BTEX	<0.04 mg/kg	TM116	<0.4 @	5.75 @	0.955 @			

CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

Asbestos Identification - Solid Samples

Results Legend

#	ISO17025 accredited.
M	*m*CERTS accredited.
*	Subcontracted test.
(F)	Trigger breach confirmed
1-5&♦§@	Sample deviation (see appendix)

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthophyllite	Fibrous Tremolite	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	BHCP105 0.30 - 0.30 SOLID 20/08/2019 00:00:00 28/08/2019 09:16:00 190828-36 20598637 TM048	30/08/2019	Marcin Magdziarek	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	BHCP105 0.50 - 0.50 SOLID 20/08/2019 00:00:00 28/08/2019 09:16:00 190828-36 20598655 TM048	30/08/2019	Lucy Caroe	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	BHCP105 1.00 - 1.00 SOLID 20/08/2019 00:00:00 28/08/2019 09:16:00 190828-36 20598666 TM048	30/08/2019	James Richards	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	CPB5 4.00 - 4.00 SOLID 22/08/2019 00:00:00 28/08/2019 09:16:00 190828-36 20598446 TM048	04/09/19	Andrzej Ferfecki	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	CPB5 7.80 - 7.80 SOLID 22/08/2019 00:00:00 28/08/2019 09:16:00 190828-36 20598438 TM048	03/09/2019	Lucy Caroe	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	CPB5 8.70 - 8.70 SOLID 22/08/2019 00:00:00 28/08/2019 09:16:00 190828-36 20598427 TM048	04/09/2019	Marcin Magdziarek	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	CPB7 2.70 - 2.70 SOLID 21/08/2019 00:00:00 28/08/2019 09:16:00 190828-36 20598824 TM048	03/09/2019	Marcin Magdziarek	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	CPB7 4.70 - 4.70 SOLID 21/08/2019 00:00:00 28/08/2019 09:16:00 190828-36 20598832 TM048	05/09/2019	Agnieszka Chelmowska	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected

Validated

CERTIFICATE OF ANALYSIS

SDG: 190828-36 **Client Reference:** **Report Number:** 522548
Location: Llanwern **Order Number:** LLA654 **Superseded Report:** 521395

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthophyllite	Fibrous Tremolite	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	CPB7 6.60 - 6.60 SOLID 21/08/2019 00:00:00 28/08/2019 09:16:00 190828-36 20598839 TM048	03/09/2019	Agnieszka Chelmowska	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	CPB9 3.50 - 3.50 SOLID 19/08/2019 00:00:00 28/08/2019 09:16:00 190828-36 20598847 TM048	04/09/19	Andrzej Ferfecki	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	CPB9 6.50 - 6.50 SOLID 19/08/2019 00:00:00 28/08/2019 09:16:00 190828-36 20598859 TM048	04/09/2019	Lucy Caroe	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	CPB9 7.60 - 7.60 SOLID 19/08/2019 00:00:00 28/08/2019 09:16:00 190828-36 20598882 TM048	04/09/2019	Marcin Magdziarek	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	CPB9 8.60 - 8.60 SOLID 19/08/2019 00:00:00 28/08/2019 09:16:00 190828-36 20598896 TM048	30/08/2019	James Richards	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	CPB11 3.50 - 3.50 SOLID 20/08/2019 00:00:00 28/08/2019 09:16:00 190828-36 20598788 TM048	03/09/2019	Marcin Magdziarek	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	CPB11 5.50 - 5.50 SOLID 20/08/2019 00:00:00 28/08/2019 09:16:00 190828-36 20598798 TM048	02/09/19	Andrzej Ferfecki	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	CPB11 9.50 - 9.50 SOLID 20/08/2019 00:00:00 28/08/2019 09:16:00 190828-36 20598808 TM048	03/09/2019	Lucy Caroe	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	CPB13 10.10 - 10.10 SOLID 22/08/2019 00:00:00 28/08/2019 09:16:00 190828-36 20598531 TM048	30/08/2019	Marcin Magdziarek	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected

Validated

CERTIFICATE OF ANALYSIS

SDG: 190828-36 **Client Reference:** **Report Number:** 522548
Location: Llanwern **Order Number:** LLA654 **Superseded Report:** 521395

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthophyllite	Fibrous Tremolite	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	CPB13 2.20 - 2.20 SOLID 22/08/2019 00:00:00 28/08/2019 09:16:00 190828-36 20598492 TM048	04/09/2019	Agnieszka Chelmowska	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	CPB13 4.20 - 4.20 SOLID 22/08/2019 00:00:00 28/08/2019 09:16:00 190828-36 20598466 TM048	03/09/2019	Lucy Caroe	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	CPB18 0.30 - 0.30 SOLID 21/08/2019 00:00:00 28/08/2019 09:16:00 190828-36 20598207 TM048	03/09/2019	Agnieszka Chelmowska	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	CPB18 0.50 - 0.50 SOLID 21/08/2019 00:00:00 28/08/2019 09:16:00 190828-36 20598340 TM048	30/08/2019	Lucy Caroe	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	CPB18 1.90 - 1.90 SOLID 21/08/2019 00:00:00 28/08/2019 09:16:00 190828-36 20598478 TM048	03/09/2019	Lucy Caroe	Loose fibres in soil	Detected (#)	Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	CPBP101 0.30 - 0.30 SOLID 20/08/2019 00:00:00 28/08/2019 09:16:00 190828-36 20598715 TM048	30/08/2019	James Richards	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	CPBP101 1.00 - 1.00 SOLID 20/08/2019 00:00:00 28/08/2019 09:16:00 190828-36 20598729 TM048	30/08/2019	Marcin Magdziarek	Loose fibres in soil	Not Detected (#)	Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	CPBP101 1.50 - 1.50 SOLID 20/08/2019 00:00:00 28/08/2019 09:16:00 190828-36 20598741 TM048	30/08/2019	Marcin Magdziarek	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	CPBR3 3.40 - 3.40 SOLID 20/08/2019 00:00:00 28/08/2019 09:16:00 190828-36 20598911 TM048	04/09/2019	Agnieszka Chelmowska	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected

CERTIFICATE OF ANALYSIS

SDG: 190828-36 **Client Reference:** **Report Number:** 522548
Location: Llanwern **Order Number:** LLA654 **Superseded Report:** 521395

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthophyllite	Fibrous Tremolite	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	CPBR3 4.80 - 4.80 SOLID 20/08/2019 00:00:00 28/08/2019 09:16:00 190828-36 20598922 TM048	04/09/2019	Agnieszka Chelmowska	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	CPBR3 7.40 - 7.40 SOLID 20/08/2019 00:00:00 28/08/2019 09:16:00 190828-36 20598930 TM048	04/09/19	Andrzej Ferfecki	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	CPBR3 9.10 - 9.10 SOLID 20/08/2019 00:00:00 28/08/2019 09:16:00 190828-36 20598817 TM048	04/09/19	Andrzej Ferfecki	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	CPBR4 2.50 - 2.50 SOLID 21/08/2019 00:00:00 28/08/2019 09:16:00 190828-36 20598217 TM048	02/09/19	Andrzej Ferfecki	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	CPBR4 3.50 - 3.50 SOLID 21/08/2019 00:00:00 28/08/2019 09:16:00 190828-36 20598227 TM048	04/09/2019	Marcin Magdziarek	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	CPBR4 7.50 - 7.50 SOLID 21/08/2019 00:00:00 28/08/2019 09:16:00 190828-36 20598239 TM048	03/09/2019	Agnieszka Chelmowska	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	CPBR4 9.40 - 9.40 SOLID 21/08/2019 00:00:00 28/08/2019 09:16:00 190828-36 20598248 TM048	03/09/2019	Marcin Magdziarek	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	CPBR9 3.10 - 3.10 SOLID 21/08/2019 00:00:00 28/08/2019 09:16:00 190828-36 20598939 TM048	03/09/2019	Agnieszka Chelmowska	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	CPBR9 4.20 - 4.20 SOLID 21/08/2019 00:00:00 28/08/2019 09:16:00 190828-36 20598946 TM048	03/09/2019	Agnieszka Chelmowska	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected

CERTIFICATE OF ANALYSIS

SDG: 190828-36 **Client Reference:** **Report Number:** 522548
Location: Llanwern **Order Number:** LLA654 **Superseded Report:** 521395

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthophyllite	Fibrous Tremolite	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	CPBR9 8.80 - 8.80 SOLID 21/08/2019 00:00:00 28/08/2019 09:16:00 190828-36 20598956 TM048	30/08/2019	Agnieszka Chelmowska	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	WS01 0.30 - 0.30 SOLID 22/08/2019 00:00:00 28/08/2019 09:16:00 190828-36 20598388 TM048	30/08/2019	James Richards	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	WS01 0.50 - 0.50 SOLID 22/08/2019 00:00:00 28/08/2019 09:16:00 190828-36 20598407 TM048	30/08/2019	James Richards	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	WS04 0.30 - 0.30 SOLID 22/08/2019 00:00:00 28/08/2019 09:16:00 190828-36 20598362 TM048	02/09/2019	Marcin Magdziarek	Loose fibres in soil	Not Detected (#)	Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	WS04 1.00 - 1.00 SOLID 22/08/2019 00:00:00 28/08/2019 09:16:00 190828-36 20598372 TM048	03/09/2019	Agnieszka Chelmowska	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	WS04 3.40 - 3.80 SOLID 22/08/2019 00:00:00 28/08/2019 09:16:00 190828-36 20598505 TM048	03/09/2019	Agnieszka Chelmowska	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	WS13 0.30 - 0.30 SOLID 22/08/2019 00:00:00 28/08/2019 09:16:00 190828-36 20598264 TM048	30/08/2019	Agnieszka Chelmowska	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	WS13 0.50 - 0.50 SOLID 22/08/2019 00:00:00 28/08/2019 09:16:00 190828-36 20598278 TM048	30/08/2019	James Richards	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	WS13 1.00 - 1.00 SOLID 22/08/2019 00:00:00 28/08/2019 09:16:00 190828-36 20598286 TM048	02/09/19	Andrzej Ferfecki	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected

Validated

CERTIFICATE OF ANALYSIS

SDG: 190828-36 **Client Reference:** **Report Number:** 522548
Location: Llanwern **Order Number:** LLA654 **Superseded Report:** 521395

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthophyllite	Fibrous Tremolite	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	WS13 1.80 - 1.80 SOLID 22/08/2019 00:00:00 28/08/2019 09:16:00 190828-36 20598295 TM048	04/09/2019	Barbara Urbanek-Walsh	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	WS19 0.30 - 0.30 SOLID 22/08/2019 00:00:00 28/08/2019 09:16:00 190828-36 20598310 TM048	30/08/2019	Agnieszka Chelmowska	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	WS19 1.00 - 1.00 SOLID 22/08/2019 00:00:00 28/08/2019 09:16:00 190828-36 20598327 TM048	30/08/2019	Lucy Caroe	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	WS19 1.80 - 1.80 SOLID 22/08/2019 00:00:00 28/08/2019 09:16:00 190828-36 20598351 TM048	04/09/2019	Marcin Magdziarek	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	WS20 1.80 - 1.80 SOLID 22/08/2019 00:00:00 28/08/2019 09:16:00 190828-36 20598518 TM048	03/09/2019	Lucy Caroe	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	WSBP104 0.30 - 0.30 SOLID 20/08/2019 00:00:00 28/08/2019 09:16:00 190828-36 20598585 TM048	02/09/19	Andrzej Ferfecki	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	WSBP104 1.00 - 1.00 SOLID 20/08/2019 00:00:00 28/08/2019 09:16:00 190828-36 20598597 TM048	02/09/2019	Lucy Caroe	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	WSBP104 1.80 - 1.80 SOLID 20/08/2019 00:00:00 28/08/2019 09:16:00 190828-36 20598613 TM048	04/09/2019	Marcin Magdziarek	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	WSBP105 0.30 - 0.30 SOLID 20/08/2019 00:00:00 28/08/2019 09:16:00 190828-36 20598682 TM048	04/09/19	Andrzej Ferfecki	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected

Validated

CERTIFICATE OF ANALYSIS

SDG: 190828-36 **Client Reference:** **Report Number:** 522548
Location: Llanwern **Order Number:** LLA654 **Superseded Report:** 521395

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthophyllite	Fibrous Tremolite	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	WSBP105 1.00 - 1.00 SOLID 20/08/2019 00:00:00 28/08/2019 09:16:00 190828-36 20598696 TM048	30/08/2019	Agnieszka Chelmowska	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	WSBP105 1.40 - 1.40 SOLID 20/08/2019 00:00:00 28/08/2019 09:16:00 190828-36 20598707 TM048	04/09/19	Andrzej Ferfecki	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	WSBP108 0.30 - 0.30 SOLID 20/08/2019 00:00:00 28/08/2019 09:16:00 190828-36 20598541 TM048	30/08/2019	Agnieszka Chelmowska	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	WSBP108 1.00 - 1.00 SOLID 20/08/2019 00:00:00 28/08/2019 09:16:00 190828-36 20598552 TM048	02/09/2019	Agnieszka Chelmowska	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	WSBP108 1.50 - 1.50 SOLID 20/08/2019 00:00:00 28/08/2019 09:16:00 190828-36 20598565 TM048	04/09/2019	Marcin Magdziarek	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	WSBP108 2.10 - 2.50 SOLID 20/08/2019 00:00:00 28/08/2019 09:16:00 190828-36 20598757 TM048	30/08/2019	Agnieszka Chelmowska	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	WSBP108 3.40 - 4.00 SOLID 20/08/2019 00:00:00 28/08/2019 09:16:00 190828-36 20598778 TM048	05/09/2019	Agnieszka Chelmowska	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	WSBP109 0.30 - 0.30 SOLID 21/08/2019 00:00:00 28/08/2019 09:16:00 190828-36 20598625 TM048	30/08/2019	Lucy Caroe	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	WSBP109 1.00 - 1.00 SOLID 21/08/2019 00:00:00 28/08/2019 09:16:00 190828-36 20598767 TM048	30/08/2019	Marcin Magdziarek	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected

Validated

CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthophyllite	Fibrous Tremolite	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	WSBP109 1.60 - 1.60 SOLID 21/08/2019 00:00:00 28/08/2019 09:16:00 190828-36 20598871 TM048	04/09/2019	Lucy Caroe	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Detected

Asbestos Quantification - Full

Results Legend

#	ISO17025 accredited.
M	*m*CERTS accredited.
*	Subcontracted test.
(F)	Trigger breach confirmed
1-5&+$@	Sample deviation (see appendix)

		Additional Asbestos Components	Analysts Comments	Asbestos Quantification - Gravimetric - %	Asbestos Quantification - PCOM	Asbestos Quantification - Total - %
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	CPB18 1.90 - 1.90 SOLID 21/08/2019 00:00:00 28/08/2019 09:16:00 190828-36 20598478 TM304	None (#)	-	<0.001 (#)	<0.001 (#)	<0.001 (#)
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	CPBP101 1.00 - 1.00 SOLID 20/08/2019 00:00:00 28/08/2019 09:16:00 190828-36 20598729 TM304	None (#)	Fibres typical of Amphibole Asbestos detected during PCOM analysis.	0.0016 (#)	<0.001 (#)	0.0022 (#)
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	WS04 0.30 - 0.30 SOLID 22/08/2019 00:00:00 28/08/2019 09:16:00 190828-36 20598362 TM304	None (#)	N/C	0.0093 (#)	<0.001 (#)	0.0094 (#)

Validated

CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.110	**Natural Moisture Content (%)**	22
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	82
Particle Size <4mm	>95%		

Case	
SDG	190828-36
Lab Sample Number(s)	20598207
Sampled Date	21-Aug-2019
Customer Sample Ref.	CPB18
Depth (m)	0.30 - 0.30

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Ammoniacal Nitrogen as N	0.0195	<0.01	0.195	<0.1	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00235	<0.0005	0.0235	<0.005	-	-	-
Free Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Phenol by HPLC (W)	<0.002	<0.002	<0.02	<0.02	-	-	-
Cresols by HPLC (W)	<0.006	<0.006	<0.06	<0.06	-	-	-
Xylenols by HPLC (W)	<0.008	<0.008	<0.08	<0.08	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Total Monohydric Phenols (W)	<0.016	<0.016	<0.16	<0.16	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	<0.0003	<0.0003	<0.003	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	0.00554	<0.001	0.0554	<0.01	-	-	-
Vanadium	0.0286	<0.001	0.286	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000245	<0.00001	0.000245	<0.0001	-	-	-
Acenaphthene by GCMS	0.000157	<0.000005	0.00157	<0.00005	-	-	-
Acenaphthylene by GCMS	0.00000845	<0.000005	0.0000845	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000815	<0.000005	0.000815	<0.00005	-	-	-
Anthracene by GCMS	0.0000188	<0.000005	0.000188	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000492	<0.000005	0.000492	<0.00005	-	-	-
Fluorene by GCMS	0.00003	<0.000005	0.0003	<0.00005	-	-	-
Chrysene by GCMS	0.0000318	<0.000005	0.000318	<0.00005	-	-	-
Pyrene by GCMS	0.0000728	<0.000005	0.000728	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.000023	<0.000005	0.00023	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.0000583	<0.000005	0.000583	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.0000201	<0.000005	0.000201	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.0000298	<0.000002	0.000298	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	0.00000734	<0.000005	0.0000734	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	0.0000246	<0.000005	0.000246	<0.00005	-	-	-

Leach Test Information

Date Prepared	05-Sep-2019
pH (pH Units)	9.72
Conductivity (µS/cm)	142.00
Temperature (°C)	19.40
Volume Leachant (Litres)	0.880

Mcerts Certification does not apply to leachates

23/09/2019 17:10:23

17:09:02 23/09/2019

CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.110	**Natural Moisture Content (%)**	22
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	82
Particle Size <4mm	>95%		

Case	
SDG	190828-36
Lab Sample Number(s)	20598207
Sampled Date	21-Aug-2019
Customer Sample Ref.	CPB18
Depth (m)	0.30 - 0.30

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
PAH Spec MS - Aqueous (W)							
PAH 16 EPA Total by GCMS	0.000637	<0.000082	0.00637	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	05-Sep-2019
pH (pH Units)	9.72
Conductivity (µS/cm)	142.00
Temperature (°C)	19.40
Volume Leachant (Litres)	0.880

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.153	**Natural Moisture Content (%)**	69.5
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	59
Particle Size <4mm	>95%		

Case	
SDG	190828-36
Lab Sample Number(s)	20598217
Sampled Date	21-Aug-2019
Customer Sample Ref.	CPBR4
Depth (m)	2.50 - 2.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Ammoniacal Nitrogen as N	10.2	<0.01	102	<0.1	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.0042	<0.0005	0.042	<0.005	-	-	-
Free Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Phenol by HPLC (W)	<0.002	<0.002	<0.02	<0.02	-	-	-
Cresols by HPLC (W)	<0.006	<0.006	<0.06	<0.06	-	-	-
Xylenols by HPLC (W)	<0.008	<0.008	<0.08	<0.08	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Total Monohydric Phenols (W)	<0.016	<0.016	<0.16	<0.16	-	-	-
Chromium	0.00363	<0.001	0.0363	<0.01	-	-	-
Copper	0.00885	<0.0003	0.0885	<0.003	-	-	-
Lead	0.00148	<0.0002	0.0148	<0.002	-	-	-
Manganese	0.0213	<0.003	0.213	<0.03	-	-	-
Nickel	0.00611	<0.0004	0.0611	<0.004	-	-	-
Selenium	0.00126	<0.001	0.0126	<0.01	-	-	-
Vanadium	0.00979	<0.001	0.0979	<0.01	-	-	-
Zinc	0.0334	<0.001	0.334	<0.01	-	-	-
Iron (Dis.Filt) mg/l	1.63	<0.019	16.3	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000463	<0.00001	0.000463	<0.0001	-	-	-
Acenaphthene by GCMS	0.000011	<0.000005	0.00011	<0.00005	-	-	-
Acenaphthylene by GCMS	0.0000276	<0.000005	0.000276	<0.00005	-	-	-
Fluoranthene by GCMS	0.00127	<0.000005	0.0127	<0.00005	-	-	-
Anthracene by GCMS	0.0000219	<0.000005	0.000219	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000983	<0.000005	0.000983	<0.00005	-	-	-
Fluorene by GCMS	0.0000306	<0.000005	0.000306	<0.00005	-	-	-
Chrysene by GCMS	0.000219	<0.000005	0.00219	<0.00005	-	-	-
Pyrene by GCMS	0.000744	<0.000005	0.00744	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.000302	<0.000005	0.00302	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.00034	<0.000005	0.0034	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.000133	<0.000005	0.00133	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.000202	<0.000002	0.00202	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	0.000026	<0.000005	0.00026	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	0.0000825	<0.000005	0.000825	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	0.000098	<0.000005	0.00098	<0.00005	-	-	-

Leach Test Information

Date Prepared	05-Sep-2019
pH (pH Units)	7.90
Conductivity (µS/cm)	303.00
Temperature (°C)	19.70
Volume Leachant (Litres)	0.837

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.153	**Natural Moisture Content (%)**	69.5
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	59
Particle Size <4mm	>95%		

Case	
SDG	190828-36
Lab Sample Number(s)	20598217
Sampled Date	21-Aug-2019
Customer Sample Ref.	CPBR4
Depth (m)	2.50 - 2.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
PAH Spec MS - Aqueous (W)							
PAH 16 EPA Total by GCMS	0.00365	<0.000082	0.0365	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	0.01	<0.01	0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	0.01	<0.01	0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	0.041	<0.01	0.41	<0.1	-	-	-
Total Aromatics >EC12-EC35	0.041	<0.01	0.41	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	0.062	<0.01	0.62	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	0.01	<0.01	0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	05-Sep-2019
pH (pH Units)	7.90
Conductivity (µS/cm)	303.00
Temperature (°C)	19.70
Volume Leachant (Litres)	0.837

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.311	**Natural Moisture Content (%)**	245
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	29
Particle Size <4mm	>95%		

Case	
SDG	190828-36
Lab Sample Number(s)	20598227
Sampled Date	21-Aug-2019
Customer Sample Ref.	CPBR4
Depth (m)	3.50 - 3.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Mercury Dissolved (CVAF)	0.0000281	<0.00001	0.000281	<0.0001	-	-	-
Ammoniacal Nitrogen as N	2.63	<0.01	26.3	<0.1	-	-	-
Total Cyanide (W)	0.43	<0.05	4.3	<0.5	-	-	-
Arsenic	0.00419	<0.0005	0.0419	<0.005	-	-	-
Free Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Phenol by HPLC (W)	<0.002	<0.002	<0.02	<0.02	-	-	-
Cresols by HPLC (W)	<0.006	<0.006	<0.06	<0.06	-	-	-
Xylenols by HPLC (W)	<0.008	<0.008	<0.08	<0.08	-	-	-
Cadmium	0.000147	<0.00008	0.00147	<0.0008	-	-	-
Total Monohydric Phenols (W)	<0.016	<0.016	<0.16	<0.16	-	-	-
Chromium	0.0178	<0.001	0.178	<0.01	-	-	-
Copper	0.0227	<0.0003	0.227	<0.003	-	-	-
Lead	0.00052	<0.0002	0.0052	<0.002	-	-	-
Manganese	0.0772	<0.003	0.772	<0.03	-	-	-
Nickel	0.00283	<0.0004	0.0283	<0.004	-	-	-
Selenium	0.0449	<0.001	0.449	<0.01	-	-	-
Vanadium	0.00949	<0.001	0.0949	<0.01	-	-	-
Zinc	0.0848	<0.001	0.848	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.301	<0.019	3.01	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	<0.00002	<0.00002	<0.0002	<0.0002	-	-	-
Acenaphthene by GCMS	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Acenaphthylene by GCMS	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Fluoranthene by GCMS	0.000275	<0.00001	0.00275	<0.0001	-	-	-
Anthracene by GCMS	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Phenanthrene by GCMS	0.0000419	<0.00001	0.000419	<0.0001	-	-	-
Fluorene by GCMS	0.0000131	<0.00001	0.000131	<0.0001	-	-	-
Chrysene by GCMS	0.00003	<0.00001	0.0003	<0.0001	-	-	-
Pyrene by GCMS	0.000194	<0.00001	0.00194	<0.0001	-	-	-
Benz(a)anthracene by GCMS	0.0000316	<0.00001	0.000316	<0.0001	-	-	-
Benzo(b)fluoranthene by GCMS	0.0000921	<0.00001	0.000921	<0.0001	-	-	-
Benzo(k)fluoranthene by GCMS	0.0000559	<0.00001	0.000559	<0.0001	-	-	-
Benzo(a)pyrene by GCMS	0.0000522	<0.000004	0.000522	<0.00004	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Benzo(ghi)perylene by GCMS	0.0000579	<0.00001	0.000579	<0.0001	-	-	-
Indeno(123cd)pyrene by GCMS	0.0000237	<0.00001	0.000237	<0.0001	-	-	-

Leach Test Information

Date Prepared	05-Sep-2019
pH (pH Units)	8.82
Conductivity (µS/cm)	2,150.00
Temperature (°C)	19.60
Volume Leachant (Litres)	0.680

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.311	**Natural Moisture Content (%)**	245
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	29
Particle Size <4mm	>95%		

Case	
SDG	190828-36
Lab Sample Number(s)	20598227
Sampled Date	21-Aug-2019
Customer Sample Ref.	CPBR4
Depth (m)	3.50 - 3.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
PAH Spec MS - Aqueous (W)							
PAH 16 EPA Total by GCMS	0.000867	<0.000164	0.00867	<0.00164	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.08	<0.08	<0.8	<0.8	-	-	-
Aliphatics >C16-C21	<0.08	<0.08	<0.8	<0.8	-	-	-
Aliphatics >C21-C35	<0.08	<0.08	<0.8	<0.8	-	-	-
Total Aliphatics >C12-C35	<0.08	<0.08	<0.8	<0.8	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.08	<0.08	<0.8	<0.8	-	-	-
Aromatics >EC16-EC21	<0.08	<0.08	<0.8	<0.8	-	-	-
Aromatics >EC21-EC35	<0.08	<0.08	<0.8	<0.8	-	-	-
Total Aromatics >EC12-EC35	<0.08	<0.08	<0.8	<0.8	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.08	<0.08	<0.8	<0.8	-	-	-

Leach Test Information

Date Prepared	05-Sep-2019
pH (pH Units)	8.82
Conductivity (µS/cm)	2,150.00
Temperature (°C)	19.60
Volume Leachant (Litres)	0.680

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.281	**Natural Moisture Content (%)**	213
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	32
Particle Size <4mm	>95%		

Case	
SDG	190828-36
Lab Sample Number(s)	20598239
Sampled Date	21-Aug-2019
Customer Sample Ref.	CPBR4
Depth (m)	7.50 - 7.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Ammoniacal Nitrogen as N	3.99	<0.01	39.9	<0.1	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.013	<0.0005	0.13	<0.005	-	-	-
Free Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Phenol by HPLC (W)	<0.002	<0.002	<0.02	<0.02	-	-	-
Cresols by HPLC (W)	0.01	<0.006	0.1	<0.06	-	-	-
Xylenols by HPLC (W)	<0.008	<0.008	<0.08	<0.08	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Total Monohydric Phenols (W)	<0.016	<0.016	<0.16	<0.16	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	<0.0003	<0.0003	<0.003	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	0.123	<0.003	1.23	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	<0.001	<0.001	<0.01	<0.01	-	-	-
Vanadium	<0.001	<0.001	<0.01	<0.01	-	-	-
Zinc	0.00728	<0.001	0.0728	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Acenaphthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000122	<0.000005	0.000122	<0.00005	-	-	-
Anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000122	<0.000005	0.000122	<0.00005	-	-	-
Fluorene by GCMS	0.00000919	<0.000005	0.0000919	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.00000803	<0.000005	0.0000803	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-

Leach Test Information

Date Prepared	05-Sep-2019
pH (pH Units)	8.00
Conductivity (µS/cm)	688.00
Temperature (°C)	19.90
Volume Leachant (Litres)	0.708

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.281	**Natural Moisture Content (%)**	213
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	32
Particle Size <4mm	>95%		

Case	
SDG	190828-36
Lab Sample Number(s)	20598239
Sampled Date	21-Aug-2019
Customer Sample Ref.	CPBR4
Depth (m)	7.50 - 7.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
PAH Spec MS - Aqueous (W)							
PAH 16 EPA Total by GCMS	<0.000082	<0.000082	<0.00082	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	0.019	<0.01	0.19	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	05-Sep-2019
pH (pH Units)	8.00
Conductivity (µS/cm)	688.00
Temperature (°C)	19.90
Volume Leachant (Litres)	0.708

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.101	**Natural Moisture Content (%)**	12.4
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	89
Particle Size <4mm	>95%		

Case	
SDG	190828-36
Lab Sample Number(s)	20598264
Sampled Date	22-Aug-2019
Customer Sample Ref.	WS13
Depth (m)	0.30 - 0.30

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Ammoniacal Nitrogen as N	0.039	<0.01	0.39	<0.1	-	-	-
Total Cyanide (W)	0.06	<0.05	0.6	<0.5	-	-	-
Arsenic	0.00167	<0.0005	0.0167	<0.005	-	-	-
Free Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Phenol by HPLC (W)	<0.002	<0.002	<0.02	<0.02	-	-	-
Cresols by HPLC (W)	<0.006	<0.006	<0.06	<0.06	-	-	-
Xylenols by HPLC (W)	<0.008	<0.008	<0.08	<0.08	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Total Monohydric Phenols (W)	<0.016	<0.016	<0.16	<0.16	-	-	-
Chromium	0.00108	<0.001	0.0108	<0.01	-	-	-
Copper	<0.0003	<0.0003	<0.003	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	0.00117	<0.001	0.0117	<0.01	-	-	-
Vanadium	0.0352	<0.001	0.352	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000657	<0.00001	0.000657	<0.0001	-	-	-
Acenaphthene by GCMS	0.0000107	<0.000005	0.000107	<0.00005	-	-	-
Acenaphthylene by GCMS	0.0000401	<0.000005	0.000401	<0.00005	-	-	-
Fluoranthene by GCMS	0.000233	<0.000005	0.00233	<0.00005	-	-	-
Anthracene by GCMS	0.000035	<0.000005	0.00035	<0.00005	-	-	-
Phenanthrene by GCMS	0.000108	<0.000005	0.00108	<0.00005	-	-	-
Fluorene by GCMS	0.0000159	<0.000005	0.000159	<0.00005	-	-	-
Chrysene by GCMS	0.000152	<0.000005	0.00152	<0.00005	-	-	-
Pyrene by GCMS	0.00029	<0.000005	0.0029	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.000103	<0.000005	0.00103	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.000174	<0.000005	0.00174	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.000105	<0.000005	0.00105	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.0000902	<0.000002	0.000902	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	0.0000163	<0.000005	0.000163	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	0.000151	<0.000005	0.00151	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	0.000069	<0.000005	0.00069	<0.00005	-	-	-

Leach Test Information

Date Prepared	05-Sep-2019
pH (pH Units)	10.41
Conductivity (µS/cm)	239.00
Temperature (°C)	19.60
Volume Leachant (Litres)	0.889

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.101	**Natural Moisture Content (%)**	12.4
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	89
Particle Size <4mm	>95%		

Case	
SDG	190828-36
Lab Sample Number(s)	20598264
Sampled Date	22-Aug-2019
Customer Sample Ref.	WS13
Depth (m)	0.30 - 0.30

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
PAH Spec MS - Aqueous (W)							
PAH 16 EPA Total by GCMS	0.00166	<0.000082	0.0166	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	05-Sep-2019
pH (pH Units)	10.41
Conductivity (µS/cm)	239.00
Temperature (°C)	19.60
Volume Leachant (Litres)	0.889

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.102	**Natural Moisture Content (%)**	13.6
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	88
Particle Size <4mm	>95%		

Case	
SDG	190828-36
Lab Sample Number(s)	20598278
Sampled Date	22-Aug-2019
Customer Sample Ref.	WS13
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Ammoniacal Nitrogen as N	0.0453	<0.01	0.453	<0.1	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00247	<0.0005	0.0247	<0.005	-	-	-
Free Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Phenol by HPLC (W)	<0.002	<0.002	<0.02	<0.02	-	-	-
Cresols by HPLC (W)	<0.006	<0.006	<0.06	<0.06	-	-	-
Xylenols by HPLC (W)	<0.008	<0.008	<0.08	<0.08	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Total Monohydric Phenols (W)	<0.016	<0.016	<0.16	<0.16	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	<0.0003	<0.0003	<0.003	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	0.00156	<0.001	0.0156	<0.01	-	-	-
Vanadium	0.0386	<0.001	0.386	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000369	<0.00001	0.000369	<0.0001	-	-	-
Acenaphthene by GCMS	0.00000706	<0.000005	0.0000706	<0.00005	-	-	-
Acenaphthylene by GCMS	0.0000272	<0.000005	0.000272	<0.00005	-	-	-
Fluoranthene by GCMS	0.000136	<0.000005	0.00136	<0.00005	-	-	-
Anthracene by GCMS	0.0000189	<0.000005	0.000189	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000646	<0.000005	0.000646	<0.00005	-	-	-
Fluorene by GCMS	0.00000925	<0.000005	0.0000925	<0.00005	-	-	-
Chrysene by GCMS	0.000101	<0.000005	0.00101	<0.00005	-	-	-
Pyrene by GCMS	0.000166	<0.000005	0.00166	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.0000757	<0.000005	0.000757	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.000138	<0.000005	0.00138	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.0000787	<0.000005	0.000787	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.000067	<0.000002	0.00067	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	0.0000139	<0.000005	0.000139	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	0.000146	<0.000005	0.00146	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	0.0000549	<0.000005	0.000549	<0.00005	-	-	-

Leach Test Information

Date Prepared	05-Sep-2019
pH (pH Units)	9.39
Conductivity (µS/cm)	206.00
Temperature (°C)	19.40
Volume Leachant (Litres)	0.888

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.102	**Natural Moisture Content (%)**	13.6
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	88
Particle Size <4mm	>95%		

Case	
SDG	190828-36
Lab Sample Number(s)	20598278
Sampled Date	22-Aug-2019
Customer Sample Ref.	WS13
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
PAH Spec MS - Aqueous (W)							
PAH 16 EPA Total by GCMS	0.00114	<0.000082	0.0114	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	05-Sep-2019
pH (pH Units)	9.39
Conductivity (µS/cm)	206.00
Temperature (°C)	19.40
Volume Leachant (Litres)	0.888

Mcerts Certification does not apply to leachates

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Validated

CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.096	**Natural Moisture Content (%)**	6.72
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	93.7
Particle Size <4mm	>95%		

Case	
SDG	190828-36
Lab Sample Number(s)	20598310
Sampled Date	22-Aug-2019
Customer Sample Ref.	WS19
Depth (m)	0.30 - 0.30

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Ammoniacal Nitrogen as N	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00352	<0.0005	0.0352	<0.005	-	-	-
Free Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Phenol by HPLC (W)	<0.002	<0.002	<0.02	<0.02	-	-	-
Cresols by HPLC (W)	<0.006	<0.006	<0.06	<0.06	-	-	-
Xylenols by HPLC (W)	<0.008	<0.008	<0.08	<0.08	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Total Monohydric Phenols (W)	<0.016	<0.016	<0.16	<0.16	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	<0.0003	<0.0003	<0.003	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	0.00445	<0.003	0.0445	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	0.00228	<0.001	0.0228	<0.01	-	-	-
Vanadium	0.0101	<0.001	0.101	<0.01	-	-	-
Zinc	0.0115	<0.001	0.115	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Acenaphthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Acenaphthylene by GCMS	0.0000194	<0.000005	0.000194	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000218	<0.000005	0.000218	<0.00005	-	-	-
Anthracene by GCMS	0.0000308	<0.000005	0.000308	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000947	<0.000005	0.000947	<0.00005	-	-	-
Fluorene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.0000475	<0.000005	0.000475	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.0000109	<0.000005	0.000109	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.0000059	<0.000005	0.000059	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.00000506	<0.000002	0.0000506	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	0.0000193	<0.000005	0.000193	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-

Leach Test Information

Date Prepared	05-Sep-2019
pH (pH Units)	8.21
Conductivity (µS/cm)	256.00
Temperature (°C)	19.40
Volume Leachant (Litres)	0.894

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.096	**Natural Moisture Content (%)**	6.72
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	93.7
Particle Size <4mm	>95%		

Case	
SDG	190828-36
Lab Sample Number(s)	20598310
Sampled Date	22-Aug-2019
Customer Sample Ref.	WS19
Depth (m)	0.30 - 0.30

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
PAH Spec MS - Aqueous (W)							
PAH 16 EPA Total by GCMS	0.000255	<0.000082	0.00255	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	0.019	<0.01	0.19	<0.1	-	-	-
Aromatics >EC21-EC35	0.015	<0.01	0.15	<0.1	-	-	-
Total Aromatics >EC12-EC35	0.034	<0.01	0.34	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	0.037	<0.01	0.37	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	05-Sep-2019
pH (pH Units)	8.21
Conductivity (µS/cm)	256.00
Temperature (°C)	19.40
Volume Leachant (Litres)	0.894

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.099	**Natural Moisture Content (%)**	10.3
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	90.7
Particle Size <4mm	>95%		

Case	
SDG	190828-36
Lab Sample Number(s)	20598327
Sampled Date	22-Aug-2019
Customer Sample Ref.	WS19
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Ammoniacal Nitrogen as N	0.0122	<0.01	0.122	<0.1	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00474	<0.0005	0.0474	<0.005	-	-	-
Free Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Phenol by HPLC (W)	<0.002	<0.002	<0.02	<0.02	-	-	-
Cresols by HPLC (W)	<0.006	<0.006	<0.06	<0.06	-	-	-
Xylenols by HPLC (W)	<0.008	<0.008	<0.08	<0.08	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Total Monohydric Phenols (W)	<0.016	<0.016	<0.16	<0.16	-	-	-
Chromium	0.00152	<0.001	0.0152	<0.01	-	-	-
Copper	<0.0003	<0.0003	<0.003	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	0.00459	<0.001	0.0459	<0.01	-	-	-
Vanadium	0.024	<0.001	0.24	<0.01	-	-	-
Zinc	0.00158	<0.001	0.0158	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Acenaphthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Acenaphthylene by GCMS	0.0000212	<0.000005	0.000212	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000346	<0.000005	0.000346	<0.00005	-	-	-
Anthracene by GCMS	0.000029	<0.000005	0.00029	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000681	<0.000005	0.000681	<0.00005	-	-	-
Fluorene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene by GCMS	0.0000157	<0.000005	0.000157	<0.00005	-	-	-
Pyrene by GCMS	0.0000348	<0.000005	0.000348	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.000012	<0.000005	0.00012	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.0000263	<0.000005	0.000263	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.0000177	<0.000005	0.000177	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.0000148	<0.000002	0.000148	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	0.0000527	<0.000005	0.000527	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	0.0000182	<0.000005	0.000182	<0.00005	-	-	-

Leach Test Information

Date Prepared	05-Sep-2019
pH (pH Units)	8.10
Conductivity (µS/cm)	208.00
Temperature (°C)	19.60
Volume Leachant (Litres)	0.891

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.099	**Natural Moisture Content (%)**	10.3
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	90.7
Particle Size <4mm	>95%		

Case	
SDG	190828-36
Lab Sample Number(s)	20598327
Sampled Date	22-Aug-2019
Customer Sample Ref.	WS19
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
PAH Spec MS - Aqueous (W)							
PAH 16 EPA Total by GCMS	0.000345	<0.000082	0.00345	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	05-Sep-2019
pH (pH Units)	8.10
Conductivity (µS/cm)	208.00
Temperature (°C)	19.60
Volume Leachant (Litres)	0.891

Mcerts Certification does not apply to leachates

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Validated

CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.113	**Natural Moisture Content (%)**	25
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	80
Particle Size <4mm	>95%		

Case	
SDG	190828-36
Lab Sample Number(s)	20598340
Sampled Date	21-Aug-2019
Customer Sample Ref.	CPB18
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Mercury Dissolved (CVAF)	0.0000352	<0.00001	0.000352	<0.0001	-	-	-
Ammoniacal Nitrogen as N	0.0238	<0.01	0.238	<0.1	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00321	<0.0005	0.0321	<0.005	-	-	-
Free Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Phenol by HPLC (W)	<0.002	<0.002	<0.02	<0.02	-	-	-
Cresols by HPLC (W)	<0.006	<0.006	<0.06	<0.06	-	-	-
Xylenols by HPLC (W)	<0.008	<0.008	<0.08	<0.08	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Total Monohydric Phenols (W)	<0.016	<0.016	<0.16	<0.16	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	<0.0003	<0.0003	<0.003	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	0.00725	<0.001	0.0725	<0.01	-	-	-
Vanadium	0.068	<0.001	0.68	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000176	<0.00001	0.000176	<0.0001	-	-	-
Acenaphthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000506	<0.000005	0.000506	<0.00005	-	-	-
Anthracene by GCMS	0.0000086	<0.000005	0.000086	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000269	<0.000005	0.000269	<0.00005	-	-	-
Fluorene by GCMS	0.00000798	<0.000005	0.0000798	<0.00005	-	-	-
Chrysene by GCMS	0.0000172	<0.000005	0.000172	<0.00005	-	-	-
Pyrene by GCMS	0.0000417	<0.000005	0.000417	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.000011	<0.000005	0.00011	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.0000266	<0.000005	0.000266	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.00000951	<0.000005	0.0000951	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.0000121	<0.000002	0.000121	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	0.0000127	<0.000005	0.000127	<0.00005	-	-	-

Leach Test Information

Date Prepared	05-Sep-2019
pH (pH Units)	9.76
Conductivity (µS/cm)	207.00
Temperature (°C)	19.40
Volume Leachant (Litres)	0.878

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.113	**Natural Moisture Content (%)**	25
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	80
Particle Size <4mm	>95%		

Case	
SDG	190828-36
Lab Sample Number(s)	20598340
Sampled Date	21-Aug-2019
Customer Sample Ref.	CPB18
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
PAH Spec MS - Aqueous (W)							
PAH 16 EPA Total by GCMS	0.000242	<0.000082	0.00242	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	05-Sep-2019
pH (pH Units)	9.76
Conductivity (µS/cm)	207.00
Temperature (°C)	19.40
Volume Leachant (Litres)	0.878

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.099	**Natural Moisture Content (%)**	10.1
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	90.8
Particle Size <4mm	>95%		

Case	
SDG	190828-36
Lab Sample Number(s)	20598362
Sampled Date	22-Aug-2019
Customer Sample Ref.	WS04
Depth (m)	0.30 - 0.30

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Mercury Dissolved (CVAF)	0.0000121	<0.00001	0.000121	<0.0001	-	-	-
Ammoniacal Nitrogen as N	0.019	<0.01	0.19	<0.1	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00268	<0.0005	0.0268	<0.005	-	-	-
Free Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Phenol by HPLC (W)	<0.002	<0.002	<0.02	<0.02	-	-	-
Cresols by HPLC (W)	<0.006	<0.006	<0.06	<0.06	-	-	-
Xylenols by HPLC (W)	<0.008	<0.008	<0.08	<0.08	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Total Monohydric Phenols (W)	<0.016	<0.016	<0.16	<0.16	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.00578	<0.0003	0.0578	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.000958	<0.0004	0.00958	<0.004	-	-	-
Selenium	0.00223	<0.001	0.0223	<0.01	-	-	-
Vanadium	0.156	<0.001	1.56	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000155	<0.00001	0.000155	<0.0001	-	-	-
Acenaphthene by GCMS	0.0000222	<0.000005	0.000222	<0.00005	-	-	-
Acenaphthylene by GCMS	0.0000481	<0.000005	0.000481	<0.00005	-	-	-
Fluoranthene by GCMS	0.000233	<0.000005	0.00233	<0.00005	-	-	-
Anthracene by GCMS	0.000031	<0.000005	0.00031	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000896	<0.000005	0.000896	<0.00005	-	-	-
Fluorene by GCMS	0.0000344	<0.000005	0.000344	<0.00005	-	-	-
Chrysene by GCMS	0.0000463	<0.000005	0.000463	<0.00005	-	-	-
Pyrene by GCMS	0.000203	<0.000005	0.00203	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.0000464	<0.000005	0.000464	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.0000321	<0.000005	0.000321	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.0000215	<0.000005	0.000215	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.0000193	<0.000002	0.000193	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	0.0000258	<0.000005	0.000258	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	0.0000108	<0.000005	0.000108	<0.00005	-	-	-

Leach Test Information

Date Prepared	05-Sep-2019
pH (pH Units)	10.21
Conductivity (µS/cm)	273.00
Temperature (°C)	19.30
Volume Leachant (Litres)	0.891

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.099	**Natural Moisture Content (%)**	10.1
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	90.8
Particle Size <4mm	>95%		

Case	
SDG	190828-36
Lab Sample Number(s)	20598362
Sampled Date	22-Aug-2019
Customer Sample Ref.	WS04
Depth (m)	0.30 - 0.30

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
PAH Spec MS - Aqueous (W)							
PAH 16 EPA Total by GCMS	0.000879	<0.000082	0.00879	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	05-Sep-2019
pH (pH Units)	10.21
Conductivity (µS/cm)	273.00
Temperature (°C)	19.30
Volume Leachant (Litres)	0.891

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.102	**Natural Moisture Content (%)**	13.6
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	88
Particle Size <4mm	>95%		

Case	
SDG	190828-36
Lab Sample Number(s)	20598372
Sampled Date	22-Aug-2019
Customer Sample Ref.	WS04
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Ammoniacal Nitrogen as N	12.3	<0.01	123	<0.1	-	-	-
Total Cyanide (W)	1.11	<0.05	11.1	<0.5	-	-	-
Arsenic	0.0074	<0.0005	0.074	<0.005	-	-	-
Free Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Phenol by HPLC (W)	0.04	<0.002	0.4	<0.02	-	-	-
Cresols by HPLC (W)	<0.006	<0.006	<0.06	<0.06	-	-	-
Xylenols by HPLC (W)	<0.008	<0.008	<0.08	<0.08	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Total Monohydric Phenols (W)	0.04	<0.016	0.4	<0.16	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	<0.0003	<0.0003	<0.003	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	0.00365	<0.003	0.0365	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	0.00366	<0.001	0.0366	<0.01	-	-	-
Vanadium	0.0536	<0.001	0.536	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.456	<0.019	4.56	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000858	<0.00001	0.000858	<0.0001	-	-	-
Acenaphthene by GCMS	0.0155	<0.000005	0.155	<0.00005	-	-	-
Acenaphthylene by GCMS	0.0521	<0.000005	0.521	<0.00005	-	-	-
Fluoranthene by GCMS	0.0691	<0.000005	0.691	<0.00005	-	-	-
Anthracene by GCMS	0.00592	<0.000005	0.0592	<0.00005	-	-	-
Phenanthrene by GCMS	0.000601	<0.000005	0.00601	<0.00005	-	-	-
Fluorene by GCMS	0.0516	<0.000005	0.516	<0.00005	-	-	-
Chrysene by GCMS	0.000574	<0.000005	0.00574	<0.00005	-	-	-
Pyrene by GCMS	0.0328	<0.000005	0.328	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.000751	<0.000005	0.00751	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.000389	<0.000005	0.00389	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.000169	<0.000005	0.00169	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.000224	<0.000002	0.00224	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	0.000164	<0.000005	0.00164	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	0.000202	<0.000005	0.00202	<0.00005	-	-	-

Leach Test Information

Date Prepared	05-Sep-2019
pH (pH Units)	9.40
Conductivity (µS/cm)	218.00
Temperature (°C)	19.50
Volume Leachant (Litres)	0.888

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.102	**Natural Moisture Content (%)**	13.6
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	88
Particle Size <4mm	>95%		

Case	
SDG	190828-36
Lab Sample Number(s)	20598372
Sampled Date	22-Aug-2019
Customer Sample Ref.	WS04
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
PAH Spec MS - Aqueous (W)							
PAH 16 EPA Total by GCMS	0.23	<0.000082	2.3	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	0.208	<0.05	2.08	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	0.011	<0.01	0.11	<0.1	-	-	-
Aliphatics >C8-C10	0.018	<0.01	0.18	<0.1	-	-	-
Aliphatics >C10-C12	0.095	<0.01	0.95	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	0.013	<0.01	0.13	<0.1	-	-	-
Aromatics >EC10-EC12	0.063	<0.01	0.63	<0.1	-	-	-
Aromatics >EC12-EC16	0.22	<0.01	2.2	<0.1	-	-	-
Aromatics >EC16-EC21	0.191	<0.01	1.91	<0.1	-	-	-
Aromatics >EC21-EC35	0.046	<0.01	0.46	<0.1	-	-	-
Total Aromatics >EC12-EC35	0.457	<0.01	4.57	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	0.665	<0.01	6.65	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	05-Sep-2019
pH (pH Units)	9.40
Conductivity (µS/cm)	218.00
Temperature (°C)	19.50
Volume Leachant (Litres)	0.888

Mcerts Certification does not apply to leachates

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Validated

CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.100	**Natural Moisture Content (%)**	11
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	90.1
Particle Size <4mm	>95%		

Case	
SDG	190828-36
Lab Sample Number(s)	20598388
Sampled Date	22-Aug-2019
Customer Sample Ref.	WS01
Depth (m)	0.30 - 0.30

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Ammoniacal Nitrogen as N	0.0143	<0.01	0.143	<0.1	-	-	-
Total Cyanide (W)	0.14	<0.05	1.4	<0.5	-	-	-
Arsenic	0.00326	<0.0005	0.0326	<0.005	-	-	-
Free Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Phenol by HPLC (W)	<0.002	<0.002	<0.02	<0.02	-	-	-
Cresols by HPLC (W)	<0.006	<0.006	<0.06	<0.06	-	-	-
Xylenols by HPLC (W)	<0.008	<0.008	<0.08	<0.08	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Total Monohydric Phenols (W)	<0.016	<0.016	<0.16	<0.16	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	<0.0003	<0.0003	<0.003	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	0.00221	<0.001	0.0221	<0.01	-	-	-
Vanadium	0.107	<0.001	1.07	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.708	<0.019	7.08	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.000869	<0.00005	0.00869	<0.0005	-	-	-
Acenaphthene by GCMS	0.000697	<0.000025	0.00697	<0.00025	-	-	-
Acenaphthylene by GCMS	0.00466	<0.000025	0.0466	<0.00025	-	-	-
Fluoranthene by GCMS	0.0134	<0.000025	0.134	<0.00025	-	-	-
Anthracene by GCMS	0.00238	<0.000025	0.0238	<0.00025	-	-	-
Phenanthrene by GCMS	0.00576	<0.000025	0.0576	<0.00025	-	-	-
Fluorene by GCMS	0.00676	<0.000025	0.0676	<0.00025	-	-	-
Chrysene by GCMS	0.00274	<0.000025	0.0274	<0.00025	-	-	-
Pyrene by GCMS	0.00905	<0.000025	0.0905	<0.00025	-	-	-
Benz(a)anthracene by GCMS	0.00329	<0.000025	0.0329	<0.00025	-	-	-
Benzo(b)fluoranthene by GCMS	0.00495	<0.000025	0.0495	<0.00025	-	-	-
Benzo(k)fluoranthene by GCMS	0.002	<0.000025	0.02	<0.00025	-	-	-
Benzo(a)pyrene by GCMS	0.00304	<0.00001	0.0304	<0.0001	-	-	-
Dibenzo(ah)anthracene by GCMS	0.000475	<0.000025	0.00475	<0.00025	-	-	-
Benzo(ghi)perylene by GCMS	0.00251	<0.000025	0.0251	<0.00025	-	-	-
Indeno(123cd)pyrene by GCMS	0.00238	<0.000025	0.0238	<0.00025	-	-	-

Leach Test Information

Date Prepared	05-Sep-2019
pH (pH Units)	9.04
Conductivity (µS/cm)	162.00
Temperature (°C)	21.80
Volume Leachant (Litres)	0.890

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.100	**Natural Moisture Content (%)**	11
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	90.1
Particle Size <4mm	>95%		

Case	
SDG	190828-36
Lab Sample Number(s)	20598388
Sampled Date	22-Aug-2019
Customer Sample Ref.	WS01
Depth (m)	0.30 - 0.30

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
PAH Spec MS - Aqueous (W)							
PAH 16 EPA Total by GCMS	0.065	<0.00041	0.65	<0.0041	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	0.025	<0.01	0.25	<0.1	-	-	-
Total Aliphatics >C12-C35	0.025	<0.01	0.25	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	0.016	<0.01	0.16	<0.1	-	-	-
Aromatics >EC21-EC35	0.026	<0.01	0.26	<0.1	-	-	-
Total Aromatics >EC12-EC35	0.042	<0.01	0.42	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	0.067	<0.01	0.67	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	0.025	<0.01	0.25	<0.1	-	-	-

Leach Test Information

Date Prepared	05-Sep-2019
pH (pH Units)	9.04
Conductivity (µS/cm)	162.00
Temperature (°C)	21.80
Volume Leachant (Litres)	0.890

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.103	**Natural Moisture Content (%)**	14.9
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	87
Particle Size <4mm	>95%		

Case	
SDG	190828-36
Lab Sample Number(s)	20598407
Sampled Date	22-Aug-2019
Customer Sample Ref.	WS01
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Mercury Dissolved (CVAF)	0.0000214	<0.00001	0.000214	<0.0001	-	-	-
Ammoniacal Nitrogen as N	0.0468	<0.01	0.468	<0.1	-	-	-
Total Cyanide (W)	0.24	<0.05	2.4	<0.5	-	-	-
Arsenic	0.00146	<0.0005	0.0146	<0.005	-	-	-
Free Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Phenol by HPLC (W)	<0.002	<0.002	<0.02	<0.02	-	-	-
Cresols by HPLC (W)	<0.006	<0.006	<0.06	<0.06	-	-	-
Xylenols by HPLC (W)	<0.008	<0.008	<0.08	<0.08	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Total Monohydric Phenols (W)	<0.016	<0.016	<0.16	<0.16	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.00141	<0.0003	0.0141	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	0.00207	<0.001	0.0207	<0.01	-	-	-
Vanadium	0.109	<0.001	1.09	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.976	<0.019	9.76	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.000112	<0.00002	0.00112	<0.0002	-	-	-
Acenaphthene by GCMS	0.000158	<0.00001	0.00158	<0.0001	-	-	-
Acenaphthylene by GCMS	0.000805	<0.00001	0.00805	<0.0001	-	-	-
Fluoranthene by GCMS	0.00179	<0.00001	0.0179	<0.0001	-	-	-
Anthracene by GCMS	0.000266	<0.00001	0.00266	<0.0001	-	-	-
Phenanthrene by GCMS	0.000678	<0.00001	0.00678	<0.0001	-	-	-
Fluorene by GCMS	0.000837	<0.00001	0.00837	<0.0001	-	-	-
Chrysene by GCMS	0.0000688	<0.00001	0.000688	<0.0001	-	-	-
Pyrene by GCMS	0.00124	<0.00001	0.0124	<0.0001	-	-	-
Benz(a)anthracene by GCMS	0.0000538	<0.00001	0.000538	<0.0001	-	-	-
Benzo(b)fluoranthene by GCMS	0.0000582	<0.00001	0.000582	<0.0001	-	-	-
Benzo(k)fluoranthene by GCMS	0.0000228	<0.00001	0.000228	<0.0001	-	-	-
Benzo(a)pyrene by GCMS	0.0000353	<0.000004	0.000353	<0.00004	-	-	-
Dibenzo(ah)anthracene by GCMS	0.0000143	<0.00001	0.000143	<0.0001	-	-	-
Benzo(ghi)perylene by GCMS	0.000011	<0.00001	0.00011	<0.0001	-	-	-
Indeno(123cd)pyrene by GCMS	0.0000196	<0.00001	0.000196	<0.0001	-	-	-

Leach Test Information

Date Prepared	05-Sep-2019
pH (pH Units)	11.05
Conductivity (µS/cm)	315.00
Temperature (°C)	21.70
Volume Leachant (Litres)	0.887

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.103	**Natural Moisture Content (%)**	14.9
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	87
Particle Size <4mm	>95%		

Case	
SDG	190828-36
Lab Sample Number(s)	20598407
Sampled Date	22-Aug-2019
Customer Sample Ref.	WS01
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
PAH Spec MS - Aqueous (W)							
PAH 16 EPA Total by GCMS	0.00617	<0.000164	0.0617	<0.00164	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	05-Sep-2019
pH (pH Units)	11.05
Conductivity (µS/cm)	315.00
Temperature (°C)	21.70
Volume Leachant (Litres)	0.887

Mcerts Certification does not apply to leachates

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Validated

CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.100	**Natural Moisture Content (%)**	11.1
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	90
Particle Size <4mm	>95%		

Case	
SDG	190828-36
Lab Sample Number(s)	20598427
Sampled Date	22-Aug-2019
Customer Sample Ref.	CPB5
Depth (m)	8.70 - 8.70

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Ammoniacal Nitrogen as N	0.737	<0.01	7.37	<0.1	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00253	<0.0005	0.0253	<0.005	-	-	-
Free Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Phenol by HPLC (W)	<0.002	<0.002	<0.02	<0.02	-	-	-
Cresols by HPLC (W)	<0.006	<0.006	<0.06	<0.06	-	-	-
Xylenols by HPLC (W)	<0.008	<0.008	<0.08	<0.08	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Total Monohydric Phenols (W)	<0.016	<0.016	<0.16	<0.16	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	<0.0003	<0.0003	<0.003	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	0.0049	<0.003	0.049	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	<0.001	<0.001	<0.01	<0.01	-	-	-
Vanadium	0.00783	<0.001	0.0783	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000222	<0.00001	0.000222	<0.0001	-	-	-
Acenaphthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000316	<0.000005	0.000316	<0.00005	-	-	-
Anthracene by GCMS	0.00000705	<0.000005	0.0000705	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000331	<0.000005	0.000331	<0.00005	-	-	-
Fluorene by GCMS	0.0000117	<0.000005	0.000117	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.0000218	<0.000005	0.000218	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-

Leach Test Information

Date Prepared	05-Sep-2019
pH (pH Units)	8.55
Conductivity (µS/cm)	140.00
Temperature (°C)	19.00
Volume Leachant (Litres)	0.890

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.100	**Natural Moisture Content (%)**	11.1
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	90
Particle Size <4mm	>95%		

Case	
SDG	190828-36
Lab Sample Number(s)	20598427
Sampled Date	22-Aug-2019
Customer Sample Ref.	CPB5
Depth (m)	8.70 - 8.70

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
PAH Spec MS - Aqueous (W)							
PAH 16 EPA Total by GCMS	0.000127	<0.000082	0.00127	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	0.011	<0.01	0.11	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	05-Sep-2019
pH (pH Units)	8.55
Conductivity (µS/cm)	140.00
Temperature (°C)	19.00
Volume Leachant (Litres)	0.890

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.195	**Natural Moisture Content (%)**	117
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	46
Particle Size <4mm	>95%		

Case	
SDG	190828-36
Lab Sample Number(s)	20598438
Sampled Date	22-Aug-2019
Customer Sample Ref.	CPB5
Depth (m)	7.80 - 7.80

Eluate Analysis	**C_2** Concⁿ in 10:1 eluate (mg/l)		**A_2** 10:1 concⁿ leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Ammoniacal Nitrogen as N	3.06	<0.01	30.6	<0.1	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00287	<0.0005	0.0287	<0.005	-	-	-
Free Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Phenol by HPLC (W)	<0.002	<0.002	<0.02	<0.02	-	-	-
Cresols by HPLC (W)	0.03	<0.006	0.3	<0.06	-	-	-
Xylenols by HPLC (W)	<0.008	<0.008	<0.08	<0.08	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Total Monohydric Phenols (W)	0.03	<0.016	0.3	<0.16	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	<0.0003	<0.0003	<0.003	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	0.0863	<0.003	0.863	<0.03	-	-	-
Nickel	0.000787	<0.0004	0.00787	<0.004	-	-	-
Selenium	<0.001	<0.001	<0.01	<0.01	-	-	-
Vanadium	0.00372	<0.001	0.0372	<0.01	-	-	-
Zinc	0.0105	<0.001	0.105	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000136	<0.00001	0.000136	<0.0001	-	-	-
Acenaphthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.000218	<0.000005	0.00218	<0.00005	-	-	-
Anthracene by GCMS	0.0000298	<0.000005	0.000298	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000441	<0.000005	0.000441	<0.00005	-	-	-
Fluorene by GCMS	0.0000167	<0.000005	0.000167	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.000116	<0.000005	0.00116	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.00000766	<0.000005	0.0000766	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-

Leach Test Information

Date Prepared	06-Sep-2019
pH (pH Units)	8.08
Conductivity (µS/cm)	401.00
Temperature (°C)	19.50
Volume Leachant (Litres)	0.795

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.195	**Natural Moisture Content (%)**	117
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	46
Particle Size <4mm	>95%		

Case	
SDG	190828-36
Lab Sample Number(s)	20598438
Sampled Date	22-Aug-2019
Customer Sample Ref.	CPB5
Depth (m)	7.80 - 7.80

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
PAH Spec MS - Aqueous (W)							
PAH 16 EPA Total by GCMS	0.000446	<0.000082	0.00446	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	06-Sep-2019
pH (pH Units)	8.08
Conductivity (µS/cm)	401.00
Temperature (°C)	19.50
Volume Leachant (Litres)	0.795

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.140	**Natural Moisture Content (%)**	56.3
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	64
Particle Size <4mm	>95%		

Case	
SDG	190828-36
Lab Sample Number(s)	20598446
Sampled Date	22-Aug-2019
Customer Sample Ref.	CPB5
Depth (m)	4.00 - 4.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Ammoniacal Nitrogen as N	1.9	<0.01	19	<0.1	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00262	<0.0005	0.0262	<0.005	-	-	-
Free Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Phenol by HPLC (W)	<0.002	<0.002	<0.02	<0.02	-	-	-
Cresols by HPLC (W)	<0.006	<0.006	<0.06	<0.06	-	-	-
Xylenols by HPLC (W)	<0.008	<0.008	<0.08	<0.08	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Total Monohydric Phenols (W)	<0.016	<0.016	<0.16	<0.16	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	<0.0003	<0.0003	<0.003	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	0.0615	<0.003	0.615	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	0.00105	<0.001	0.0105	<0.01	-	-	-
Vanadium	0.00179	<0.001	0.0179	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Acenaphthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000152	<0.000005	0.000152	<0.00005	-	-	-
Anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Phenanthrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluorene by GCMS	0.00000566	<0.000005	0.0000566	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.0000107	<0.000005	0.000107	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-

Leach Test Information

Date Prepared	05-Sep-2019
pH (pH Units)	8.12
Conductivity (µS/cm)	266.00
Temperature (°C)	19.30
Volume Leachant (Litres)	0.849

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.140	**Natural Moisture Content (%)**	56.3
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	64
Particle Size <4mm	>95%		

Case	
SDG	190828-36
Lab Sample Number(s)	20598446
Sampled Date	22-Aug-2019
Customer Sample Ref.	CPB5
Depth (m)	4.00 - 4.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
PAH Spec MS - Aqueous (W)							
PAH 16 EPA Total by GCMS	<0.000082	<0.000082	<0.00082	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	05-Sep-2019
pH (pH Units)	8.12
Conductivity (µS/cm)	266.00
Temperature (°C)	19.30
Volume Leachant (Litres)	0.849

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.136	**Natural Moisture Content (%)**	51.5
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	66
Particle Size <4mm	>95%		

Case	
SDG	190828-36
Lab Sample Number(s)	20598466
Sampled Date	22-Aug-2019
Customer Sample Ref.	CPB13
Depth (m)	4.20 - 4.20

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Ammoniacal Nitrogen as N	0.905	<0.01	9.05	<0.1	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00237	<0.0005	0.0237	<0.005	-	-	-
Free Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Phenol by HPLC (W)	<0.002	<0.002	<0.02	<0.02	-	-	-
Cresols by HPLC (W)	<0.006	<0.006	<0.06	<0.06	-	-	-
Xylenols by HPLC (W)	<0.008	<0.008	<0.08	<0.08	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Total Monohydric Phenols (W)	<0.016	<0.016	<0.16	<0.16	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.00421	<0.0003	0.0421	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	0.0768	<0.003	0.768	<0.03	-	-	-
Nickel	0.00161	<0.0004	0.0161	<0.004	-	-	-
Selenium	0.00183	<0.001	0.0183	<0.01	-	-	-
Vanadium	<0.001	<0.001	<0.01	<0.01	-	-	-
Zinc	0.00297	<0.001	0.0297	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Acenaphthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000124	<0.000005	0.000124	<0.00005	-	-	-
Anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000116	<0.000005	0.000116	<0.00005	-	-	-
Fluorene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.00000884	<0.000005	0.0000884	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-

Leach Test Information

Date Prepared	05-Sep-2019
pH (pH Units)	8.49
Conductivity (µS/cm)	213.00
Temperature (°C)	19.50
Volume Leachant (Litres)	0.854

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.136	**Natural Moisture Content (%)**	51.5
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	66
Particle Size <4mm	>95%		

Case	
SDG	190828-36
Lab Sample Number(s)	20598466
Sampled Date	22-Aug-2019
Customer Sample Ref.	CPB13
Depth (m)	4.20 - 4.20

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
PAH Spec MS - Aqueous (W)							
PAH 16 EPA Total by GCMS	<0.000082	<0.000082	<0.00082	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	05-Sep-2019
pH (pH Units)	8.49
Conductivity (µS/cm)	213.00
Temperature (°C)	19.50
Volume Leachant (Litres)	0.854

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.134	**Natural Moisture Content (%)**	49.3
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	67
Particle Size <4mm	>95%		

Case	
SDG	190828-36
Lab Sample Number(s)	20598492
Sampled Date	22-Aug-2019
Customer Sample Ref.	CPB13
Depth (m)	2.20 - 2.20

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Ammoniacal Nitrogen as N	0.797	<0.01	7.97	<0.1	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00125	<0.0005	0.0125	<0.005	-	-	-
Free Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Phenol by HPLC (W)	<0.002	<0.002	<0.02	<0.02	-	-	-
Cresols by HPLC (W)	0.02	<0.006	0.2	<0.06	-	-	-
Xylenols by HPLC (W)	<0.008	<0.008	<0.08	<0.08	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Total Monohydric Phenols (W)	0.02	<0.016	0.2	<0.16	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.000948	<0.0003	0.00948	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	0.129	<0.003	1.29	<0.03	-	-	-
Nickel	0.00164	<0.0004	0.0164	<0.004	-	-	-
Selenium	0.00157	<0.001	0.0157	<0.01	-	-	-
Vanadium	<0.001	<0.001	<0.01	<0.01	-	-	-
Zinc	0.00386	<0.001	0.0386	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.518	<0.019	5.18	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000244	<0.00001	0.000244	<0.0001	-	-	-
Acenaphthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000251	<0.000005	0.000251	<0.00005	-	-	-
Anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000178	<0.000005	0.000178	<0.00005	-	-	-
Fluorene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.0000184	<0.000005	0.000184	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-

Leach Test Information

Date Prepared	07-Sep-2019
pH (pH Units)	7.95
Conductivity (µS/cm)	179.00
Temperature (°C)	8.90
Volume Leachant (Litres)	0.856

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.134	**Natural Moisture Content (%)**	49.3
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	67
Particle Size <4mm	>95%		

Case	
SDG	190828-36
Lab Sample Number(s)	20598492
Sampled Date	22-Aug-2019
Customer Sample Ref.	CPB13
Depth (m)	2.20 - 2.20

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
PAH Spec MS - Aqueous (W)							
PAH 16 EPA Total by GCMS	0.0000857	<0.000082	0.000857	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	07-Sep-2019
pH (pH Units)	7.95
Conductivity (µS/cm)	179.00
Temperature (°C)	8.90
Volume Leachant (Litres)	0.856

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.375	**Natural Moisture Content (%)**	317
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	24
Particle Size <4mm	>95%		

Case	
SDG	190828-36
Lab Sample Number(s)	20598505
Sampled Date	22-Aug-2019
Customer Sample Ref.	WS04
Depth (m)	3.40 - 3.80

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Ammoniacal Nitrogen as N	8.17	<0.01	81.7	<0.1	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00509	<0.0005	0.0509	<0.005	-	-	-
Free Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Phenol by HPLC (W)	<0.002	<0.002	<0.02	<0.02	-	-	-
Cresols by HPLC (W)	<0.006	<0.006	<0.06	<0.06	-	-	-
Xylenols by HPLC (W)	<0.008	<0.008	<0.08	<0.08	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Total Monohydric Phenols (W)	<0.016	<0.016	<0.16	<0.16	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	<0.0003	<0.0003	<0.003	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	0.134	<0.003	1.34	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	<0.001	<0.001	<0.01	<0.01	-	-	-
Vanadium	<0.001	<0.001	<0.01	<0.01	-	-	-
Zinc	0.00442	<0.001	0.0442	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000148	<0.00001	0.000148	<0.0001	-	-	-
Acenaphthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000331	<0.000005	0.000331	<0.00005	-	-	-
Anthracene by GCMS	0.00000537	<0.000005	0.0000537	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000148	<0.000005	0.000148	<0.00005	-	-	-
Fluorene by GCMS	0.00000923	<0.000005	0.0000923	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.0000209	<0.000005	0.000209	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-

Leach Test Information

Date Prepared	05-Sep-2019
pH (pH Units)	8.00
Conductivity (µS/cm)	359.00
Temperature (°C)	19.40
Volume Leachant (Litres)	0.615

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.375	**Natural Moisture Content (%)**	317
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	24
Particle Size <4mm	>95%		

Case	
SDG	190828-36
Lab Sample Number(s)	20598505
Sampled Date	22-Aug-2019
Customer Sample Ref.	WS04
Depth (m)	3.40 - 3.80

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
PAH Spec MS - Aqueous (W)							
PAH 16 EPA Total by GCMS	0.0000982	<0.000082	0.000982	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	05-Sep-2019
pH (pH Units)	8.00
Conductivity (µS/cm)	359.00
Temperature (°C)	19.40
Volume Leachant (Litres)	0.615

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.105	**Natural Moisture Content (%)**	16.3
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	86
Particle Size <4mm	>95%		

Case	
SDG	190828-36
Lab Sample Number(s)	20598531
Sampled Date	22-Aug-2019
Customer Sample Ref.	CPB13
Depth (m)	10.10 - 10.10

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Ammoniacal Nitrogen as N	1.44	<0.01	14.4	<0.1	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00137	<0.0005	0.0137	<0.005	-	-	-
Free Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Phenol by HPLC (W)	<0.002	<0.002	<0.02	<0.02	-	-	-
Cresols by HPLC (W)	<0.006	<0.006	<0.06	<0.06	-	-	-
Xylenols by HPLC (W)	<0.008	<0.008	<0.08	<0.08	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Total Monohydric Phenols (W)	<0.016	<0.016	<0.16	<0.16	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.00144	<0.0003	0.0144	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.000496	<0.0004	0.00496	<0.004	-	-	-
Selenium	0.00104	<0.001	0.0104	<0.01	-	-	-
Vanadium	0.00236	<0.001	0.0236	<0.01	-	-	-
Zinc	0.00404	<0.001	0.0404	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000284	<0.00002	0.000284	<0.0002	-	-	-
Acenaphthene by GCMS	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Acenaphthylene by GCMS	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Fluoranthene by GCMS	0.0000296	<0.00001	0.000296	<0.0001	-	-	-
Anthracene by GCMS	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Phenanthrene by GCMS	0.0000178	<0.00001	0.000178	<0.0001	-	-	-
Fluorene by GCMS	0.0000108	<0.00001	0.000108	<0.0001	-	-	-
Chrysene by GCMS	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Pyrene by GCMS	0.0000192	<0.00001	0.000192	<0.0001	-	-	-
Benz(a)anthracene by GCMS	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Benzo(b)fluoranthene by GCMS	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Benzo(k)fluoranthene by GCMS	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Benzo(a)pyrene by GCMS	<0.000004	<0.000004	<0.00004	<0.00004	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Benzo(ghi)perylene by GCMS	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Indeno(123cd)pyrene by GCMS	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-

Leach Test Information

Date Prepared	07-Sep-2019
pH (pH Units)	8.19
Conductivity (µS/cm)	202.00
Temperature (°C)	18.20
Volume Leachant (Litres)	0.885

Mcerts Certification does not apply to leachates
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CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.105	**Natural Moisture Content (%)**	16.3
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	86
Particle Size <4mm	>95%		

Case	
SDG	190828-36
Lab Sample Number(s)	20598531
Sampled Date	22-Aug-2019
Customer Sample Ref.	CPB13
Depth (m)	10.10 - 10.10

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
PAH Spec MS - Aqueous (W)							
PAH 16 EPA Total by GCMS	<0.000164	<0.000164	<0.00164	<0.00164	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	07-Sep-2019
pH (pH Units)	8.19
Conductivity (µS/cm)	202.00
Temperature (°C)	18.20
Volume Leachant (Litres)	0.885

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.099	**Natural Moisture Content (%)**	9.89
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	91
Particle Size <4mm	>95%		

Case	
SDG	190828-36
Lab Sample Number(s)	20598541
Sampled Date	20-Aug-2019
Customer Sample Ref.	WSBP108
Depth (m)	0.30 - 0.30

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Ammoniacal Nitrogen as N	0.0142	<0.01	0.142	<0.1	-	-	-
Total Cyanide (W)	0.08	<0.05	0.8	<0.5	-	-	-
Arsenic	0.0111	<0.0005	0.111	<0.005	-	-	-
Free Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Phenol by HPLC (W)	<0.002	<0.002	<0.02	<0.02	-	-	-
Cresols by HPLC (W)	<0.006	<0.006	<0.06	<0.06	-	-	-
Xylenols by HPLC (W)	<0.008	<0.008	<0.08	<0.08	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Total Monohydric Phenols (W)	<0.016	<0.016	<0.16	<0.16	-	-	-
Chromium	0.00231	<0.001	0.0231	<0.01	-	-	-
Copper	0.00277	<0.0003	0.0277	<0.003	-	-	-
Lead	0.000236	<0.0002	0.00236	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	0.00474	<0.001	0.0474	<0.01	-	-	-
Vanadium	0.0428	<0.001	0.428	<0.01	-	-	-
Zinc	0.00105	<0.001	0.0105	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.503	<0.019	5.03	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000271	<0.00001	0.000271	<0.0001	-	-	-
Acenaphthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Acenaphthylene by GCMS	0.0000054	<0.000005	0.000054	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000594	<0.000005	0.000594	<0.00005	-	-	-
Anthracene by GCMS	0.00000733	<0.000005	0.0000733	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000446	<0.000005	0.000446	<0.00005	-	-	-
Fluorene by GCMS	0.00000587	<0.000005	0.0000587	<0.00005	-	-	-
Chrysene by GCMS	0.00000779	<0.000005	0.0000779	<0.00005	-	-	-
Pyrene by GCMS	0.0000456	<0.000005	0.000456	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.000021	<0.000005	0.00021	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.0000151	<0.000005	0.000151	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.00000954	<0.000005	0.0000954	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.00000616	<0.000002	0.0000616	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-

Leach Test Information

Date Prepared	05-Sep-2019
pH (pH Units)	8.52
Conductivity (µS/cm)	143.00
Temperature (°C)	19.60
Volume Leachant (Litres)	0.891

Mcerts Certification does not apply to leachates
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CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.099	**Natural Moisture Content (%)**	9.89
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	91
Particle Size <4mm	>95%		

Case	
SDG	190828-36
Lab Sample Number(s)	20598541
Sampled Date	20-Aug-2019
Customer Sample Ref.	WSBP108
Depth (m)	0.30 - 0.30

Eluate Analysis	**C_2** Concⁿ in 10:1 eluate (mg/l)		**A_2** 10:1 concⁿ leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
PAH Spec MS - Aqueous (W)							
PAH 16 EPA Total by GCMS	0.000255	<0.000082	0.00255	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	0.032	<0.01	0.32	<0.1	-	-	-
Toluene by GC	0.004	<0.004	0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	05-Sep-2019
pH (pH Units)	8.52
Conductivity (µS/cm)	143.00
Temperature (°C)	19.60
Volume Leachant (Litres)	0.891

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.103	**Natural Moisture Content (%)**	14.9
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	87
Particle Size <4mm	>95%		

Case	
SDG	190828-36
Lab Sample Number(s)	20598552
Sampled Date	20-Aug-2019
Customer Sample Ref.	WSBP108
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Ammoniacal Nitrogen as N	0.0474	<0.01	0.474	<0.1	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00347	<0.0005	0.0347	<0.005	-	-	-
Free Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Phenol by HPLC (W)	<0.002	<0.002	<0.02	<0.02	-	-	-
Cresols by HPLC (W)	<0.006	<0.006	<0.06	<0.06	-	-	-
Xylenols by HPLC (W)	<0.008	<0.008	<0.08	<0.08	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Total Monohydric Phenols (W)	<0.016	<0.016	<0.16	<0.16	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	<0.0003	<0.0003	<0.003	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	0.21	<0.003	2.1	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	0.00513	<0.001	0.0513	<0.01	-	-	-
Vanadium	0.0074	<0.001	0.074	<0.01	-	-	-
Zinc	0.00135	<0.001	0.0135	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Acenaphthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Anthracene by GCMS	0.0000082	<0.000005	0.000082	<0.00005	-	-	-
Phenanthrene by GCMS	0.00001	<0.000005	0.0001	<0.00005	-	-	-
Fluorene by GCMS	0.00000634	<0.000005	0.0000634	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.00000764	<0.000005	0.0000764	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-

Leach Test Information

Date Prepared	05-Sep-2019
pH (pH Units)	7.44
Conductivity (µS/cm)	484.00
Temperature (°C)	19.70
Volume Leachant (Litres)	0.887

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.103	**Natural Moisture Content (%)**	14.9
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	87
Particle Size <4mm	>95%		

Case	
SDG	190828-36
Lab Sample Number(s)	20598552
Sampled Date	20-Aug-2019
Customer Sample Ref.	WSBP108
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Concⁿ in 10:1 eluate (mg/l)		**A_2** 10:1 concⁿ leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
PAH Spec MS - Aqueous (W)							
PAH 16 EPA Total by GCMS	<0.000082	<0.000082	<0.00082	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	05-Sep-2019
pH (pH Units)	7.44
Conductivity (µS/cm)	484.00
Temperature (°C)	19.70
Volume Leachant (Litres)	0.887

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.096	**Natural Moisture Content (%)**	6.95
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	93.5
Particle Size <4mm	>95%		

Case	
SDG	190828-36
Lab Sample Number(s)	20598585
Sampled Date	20-Aug-2019
Customer Sample Ref.	WSBP104
Depth (m)	0.30 - 0.30

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Ammoniacal Nitrogen as N	0.0112	<0.01	0.112	<0.1	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.0044	<0.0005	0.044	<0.005	-	-	-
Free Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Phenol by HPLC (W)	<0.002	<0.002	<0.02	<0.02	-	-	-
Cresols by HPLC (W)	<0.006	<0.006	<0.06	<0.06	-	-	-
Xylenols by HPLC (W)	<0.008	<0.008	<0.08	<0.08	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Total Monohydric Phenols (W)	<0.016	<0.016	<0.16	<0.16	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	<0.0003	<0.0003	<0.003	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	0.00202	<0.001	0.0202	<0.01	-	-	-
Vanadium	0.0514	<0.001	0.514	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.000068	<0.00001	0.00068	<0.0001	-	-	-
Acenaphthene by GCMS	0.0000075	<0.000005	0.000075	<0.00005	-	-	-
Acenaphthylene by GCMS	0.00000718	<0.000005	0.0000718	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000716	<0.000005	0.000716	<0.00005	-	-	-
Anthracene by GCMS	0.0000153	<0.000005	0.000153	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000369	<0.000005	0.000369	<0.00005	-	-	-
Fluorene by GCMS	0.00000835	<0.000005	0.0000835	<0.00005	-	-	-
Chrysene by GCMS	0.0000232	<0.000005	0.000232	<0.00005	-	-	-
Pyrene by GCMS	0.0000523	<0.000005	0.000523	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.0000207	<0.000005	0.000207	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.0000446	<0.000005	0.000446	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.0000159	<0.000005	0.000159	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.0000226	<0.000002	0.000226	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	0.00000705	<0.000005	0.0000705	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	0.0000182	<0.000005	0.000182	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	0.0000236	<0.000005	0.000236	<0.00005	-	-	-

Leach Test Information

Date Prepared	07-Sep-2019
pH (pH Units)	9.25
Conductivity (µS/cm)	128.00
Temperature (°C)	21.80
Volume Leachant (Litres)	0.894

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.096	**Natural Moisture Content (%)**	6.95
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	93.5
Particle Size <4mm	>95%		

Case	
SDG	190828-36
Lab Sample Number(s)	20598585
Sampled Date	20-Aug-2019
Customer Sample Ref.	WSBP104
Depth (m)	0.30 - 0.30

Eluate Analysis	**C_2** Concⁿ in 10:1 eluate (mg/l)		**A_2** 10:1 concⁿ leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
PAH Spec MS - Aqueous (W)							
PAH 16 EPA Total by GCMS	0.000443	<0.000082	0.00443	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	0.019	<0.01	0.19	<0.1	-	-	-
Total Aliphatics >C12-C35	0.019	<0.01	0.19	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	0.019	<0.01	0.19	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	0.019	<0.01	0.19	<0.1	-	-	-

Leach Test Information

Date Prepared	07-Sep-2019
pH (pH Units)	9.25
Conductivity (µS/cm)	128.00
Temperature (°C)	21.80
Volume Leachant (Litres)	0.894

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.105	**Natural Moisture Content (%)**	16.3
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	86
Particle Size <4mm	>95%		

Case	
SDG	190828-36
Lab Sample Number(s)	20598597
Sampled Date	20-Aug-2019
Customer Sample Ref.	WSBP104
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Mercury Dissolved (CVAF)	0.0000684	<0.00001	0.000684	<0.0001	-	-	-
Ammoniacal Nitrogen as N	0.0503	<0.01	0.503	<0.1	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.000528	<0.0005	0.00528	<0.005	-	-	-
Free Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Phenol by HPLC (W)	<0.002	<0.002	<0.02	<0.02	-	-	-
Cresols by HPLC (W)	<0.006	<0.006	<0.06	<0.06	-	-	-
Xylenols by HPLC (W)	<0.008	<0.008	<0.08	<0.08	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Total Monohydric Phenols (W)	<0.016	<0.016	<0.16	<0.16	-	-	-
Chromium	0.0011	<0.001	0.011	<0.01	-	-	-
Copper	<0.0003	<0.0003	<0.003	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	0.00165	<0.001	0.0165	<0.01	-	-	-
Vanadium	0.0491	<0.001	0.491	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000884	<0.00001	0.000884	<0.0001	-	-	-
Acenaphthene by GCMS	0.0000578	<0.000005	0.000578	<0.00005	-	-	-
Acenaphthylene by GCMS	0.00000897	<0.000005	0.0000897	<0.00005	-	-	-
Fluoranthene by GCMS	0.000376	<0.000005	0.00376	<0.00005	-	-	-
Anthracene by GCMS	0.0000305	<0.000005	0.000305	<0.00005	-	-	-
Phenanthrene by GCMS	0.000114	<0.000005	0.00114	<0.00005	-	-	-
Fluorene by GCMS	0.0000214	<0.000005	0.000214	<0.00005	-	-	-
Chrysene by GCMS	0.0000226	<0.000005	0.000226	<0.00005	-	-	-
Pyrene by GCMS	0.00029	<0.000005	0.0029	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.0000176	<0.000005	0.000176	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.00000698	<0.000005	0.0000698	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-

Leach Test Information

Date Prepared	07-Sep-2019
pH (pH Units)	10.84
Conductivity (µS/cm)	511.00
Temperature (°C)	22.00
Volume Leachant (Litres)	0.885

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.105	**Natural Moisture Content (%)**	16.3
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	86
Particle Size <4mm	>95%		

Case	
SDG	190828-36
Lab Sample Number(s)	20598597
Sampled Date	20-Aug-2019
Customer Sample Ref.	WSBP104
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
PAH Spec MS - Aqueous (W)							
PAH 16 EPA Total by GCMS	0.00103	<0.000082	0.0103	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	07-Sep-2019
pH (pH Units)	10.84
Conductivity (µS/cm)	511.00
Temperature (°C)	22.00
Volume Leachant (Litres)	0.885

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.140	**Natural Moisture Content (%)**	56.3
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	64
Particle Size <4mm	>95%		

Case	
SDG	190828-36
Lab Sample Number(s)	20598613
Sampled Date	20-Aug-2019
Customer Sample Ref.	WSBP104
Depth (m)	1.80 - 1.80

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Ammoniacal Nitrogen as N	9.4	<0.01	94	<0.1	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.0225	<0.0005	0.225	<0.005	-	-	-
Free Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Phenol by HPLC (W)	<0.002	<0.002	<0.02	<0.02	-	-	-
Cresols by HPLC (W)	<0.006	<0.006	<0.06	<0.06	-	-	-
Xylenols by HPLC (W)	<0.008	<0.008	<0.08	<0.08	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Total Monohydric Phenols (W)	<0.016	<0.016	<0.16	<0.16	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.00349	<0.0003	0.0349	<0.003	-	-	-
Lead	0.000323	<0.0002	0.00323	<0.002	-	-	-
Manganese	0.246	<0.003	2.46	<0.03	-	-	-
Nickel	0.00357	<0.0004	0.0357	<0.004	-	-	-
Selenium	0.00148	<0.001	0.0148	<0.01	-	-	-
Vanadium	0.0052	<0.001	0.052	<0.01	-	-	-
Zinc	0.00224	<0.001	0.0224	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.457	<0.019	4.57	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Acenaphthene by GCMS	0.0000264	<0.000025	0.000264	<0.00025	-	-	-
Acenaphthylene by GCMS	<0.000025	<0.000025	<0.00025	<0.00025	-	-	-
Fluoranthene by GCMS	0.0000518	<0.000025	0.000518	<0.00025	-	-	-
Anthracene by GCMS	<0.000025	<0.000025	<0.00025	<0.00025	-	-	-
Phenanthrene by GCMS	0.0000279	<0.000025	0.000279	<0.00025	-	-	-
Fluorene by GCMS	0.000029	<0.000025	0.00029	<0.00025	-	-	-
Chrysene by GCMS	<0.000025	<0.000025	<0.00025	<0.00025	-	-	-
Pyrene by GCMS	0.0000459	<0.000025	0.000459	<0.00025	-	-	-
Benz(a)anthracene by GCMS	<0.000025	<0.000025	<0.00025	<0.00025	-	-	-
Benzo(b)fluoranthene by GCMS	0.000029	<0.000025	0.00029	<0.00025	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000025	<0.000025	<0.00025	<0.00025	-	-	-
Benzo(a)pyrene by GCMS	0.0000284	<0.00001	0.000284	<0.0001	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000025	<0.000025	<0.00025	<0.00025	-	-	-
Benzo(ghi)perylene by GCMS	<0.000025	<0.000025	<0.00025	<0.00025	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000025	<0.000025	<0.00025	<0.00025	-	-	-

Leach Test Information

Date Prepared	06-Sep-2019
pH (pH Units)	7.28
Conductivity (µS/cm)	521.00
Temperature (°C)	21.90
Volume Leachant (Litres)	0.849

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.140	**Natural Moisture Content (%)**	56.3
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	64
Particle Size <4mm	>95%		

Case	
SDG	190828-36
Lab Sample Number(s)	20598613
Sampled Date	20-Aug-2019
Customer Sample Ref.	WSBP104
Depth (m)	1.80 - 1.80

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
PAH Spec MS - Aqueous (W)							
PAH 16 EPA Total by GCMS	<0.00041	<0.00041	<0.0041	<0.0041	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	06-Sep-2019
pH (pH Units)	7.28
Conductivity (µS/cm)	521.00
Temperature (°C)	21.90
Volume Leachant (Litres)	0.849

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.097	**Natural Moisture Content (%)**	8.11
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	92.5
Particle Size <4mm	>95%		

Case	
SDG	190828-36
Lab Sample Number(s)	20598625
Sampled Date	21-Aug-2019
Customer Sample Ref.	WSBP109
Depth (m)	0.30 - 0.30

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Ammoniacal Nitrogen as N	0.0147	<0.01	0.147	<0.1	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00412	<0.0005	0.0412	<0.005	-	-	-
Free Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Phenol by HPLC (W)	<0.002	<0.002	<0.02	<0.02	-	-	-
Cresols by HPLC (W)	<0.006	<0.006	<0.06	<0.06	-	-	-
Xylenols by HPLC (W)	<0.008	<0.008	<0.08	<0.08	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Total Monohydric Phenols (W)	<0.016	<0.016	<0.16	<0.16	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	<0.0003	<0.0003	<0.003	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	0.00208	<0.001	0.0208	<0.01	-	-	-
Vanadium	0.0253	<0.001	0.253	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000822	<0.00002	0.000822	<0.0002	-	-	-
Acenaphthene by GCMS	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Acenaphthylene by GCMS	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Fluoranthene by GCMS	0.0000344	<0.00001	0.000344	<0.0001	-	-	-
Anthracene by GCMS	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Phenanthrene by GCMS	0.0000243	<0.00001	0.000243	<0.0001	-	-	-
Fluorene by GCMS	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Chrysene by GCMS	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Pyrene by GCMS	0.0000261	<0.00001	0.000261	<0.0001	-	-	-
Benz(a)anthracene by GCMS	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Benzo(b)fluoranthene by GCMS	0.0000232	<0.00001	0.000232	<0.0001	-	-	-
Benzo(k)fluoranthene by GCMS	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Benzo(a)pyrene by GCMS	0.0000103	<0.000004	0.000103	<0.00004	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Benzo(ghi)perylene by GCMS	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Indeno(123cd)pyrene by GCMS	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-

Leach Test Information

Date Prepared	05-Sep-2019
pH (pH Units)	8.95
Conductivity (µS/cm)	110.00
Temperature (°C)	21.80
Volume Leachant (Litres)	0.893

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.097	**Natural Moisture Content (%)**	8.11
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	92.5
Particle Size <4mm	>95%		

Case	
SDG	190828-36
Lab Sample Number(s)	20598625
Sampled Date	21-Aug-2019
Customer Sample Ref.	WSBP109
Depth (m)	0.30 - 0.30

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
PAH Spec MS - Aqueous (W)							
PAH 16 EPA Total by GCMS	0.000201	<0.000164	0.00201	<0.00164	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	05-Sep-2019
pH (pH Units)	8.95
Conductivity (µS/cm)	110.00
Temperature (°C)	21.80
Volume Leachant (Litres)	0.893

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.098	**Natural Moisture Content (%)**	9.77
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	91.1
Particle Size <4mm	>95%		

Case	
SDG	190828-36
Lab Sample Number(s)	20598637
Sampled Date	20-Aug-2019
Customer Sample Ref.	BHCP105
Depth (m)	0.30 - 0.30

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Ammoniacal Nitrogen as N	0.0143	<0.01	0.143	<0.1	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00144	<0.0005	0.0144	<0.005	-	-	-
Free Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Phenol by HPLC (W)	<0.002	<0.002	<0.02	<0.02	-	-	-
Cresols by HPLC (W)	<0.006	<0.006	<0.06	<0.06	-	-	-
Xylenols by HPLC (W)	<0.008	<0.008	<0.08	<0.08	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Total Monohydric Phenols (W)	<0.016	<0.016	<0.16	<0.16	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.00202	<0.0003	0.0202	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	0.00615	<0.001	0.0615	<0.01	-	-	-
Vanadium	0.0708	<0.001	0.708	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.000133	<0.00001	0.00133	<0.0001	-	-	-
Acenaphthene by GCMS	0.0000539	<0.000005	0.000539	<0.00005	-	-	-
Acenaphthylene by GCMS	0.0000283	<0.000005	0.000283	<0.00005	-	-	-
Fluoranthene by GCMS	0.00033	<0.000005	0.0033	<0.00005	-	-	-
Anthracene by GCMS	0.0000788	<0.000005	0.000788	<0.00005	-	-	-
Phenanthrene by GCMS	0.000372	<0.000005	0.00372	<0.00005	-	-	-
Fluorene by GCMS	0.000115	<0.000005	0.00115	<0.00005	-	-	-
Chrysene by GCMS	0.00000692	<0.000005	0.0000692	<0.00005	-	-	-
Pyrene by GCMS	0.000266	<0.000005	0.00266	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.0000168	<0.000005	0.000168	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.00000964	<0.000005	0.0000964	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.00000499	<0.000002	0.0000499	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-

Leach Test Information

Date Prepared	06-Sep-2019
pH (pH Units)	10.20
Conductivity (µS/cm)	356.00
Temperature (°C)	19.60
Volume Leachant (Litres)	0.891

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.098	**Natural Moisture Content (%)**	9.77
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	91.1
Particle Size <4mm	>95%		

Case	
SDG	190828-36
Lab Sample Number(s)	20598637
Sampled Date	20-Aug-2019
Customer Sample Ref.	BHCP105
Depth (m)	0.30 - 0.30

Eluate Analysis	**C_2** Concⁿ in 10:1 eluate (mg/l)		**A_2** 10:1 concⁿ leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
PAH Spec MS - Aqueous (W)							
PAH 16 EPA Total by GCMS	0.00142	<0.000082	0.0142	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	06-Sep-2019
pH (pH Units)	10.20
Conductivity (µS/cm)	356.00
Temperature (°C)	19.60
Volume Leachant (Litres)	0.891

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.101	**Natural Moisture Content (%)**	12.4
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	89
Particle Size <4mm	>95%		

Case	
SDG	190828-36
Lab Sample Number(s)	20598655
Sampled Date	20-Aug-2019
Customer Sample Ref.	BHCP105
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Ammoniacal Nitrogen as N	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00274	<0.0005	0.0274	<0.005	-	-	-
Free Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Phenol by HPLC (W)	<0.002	<0.002	<0.02	<0.02	-	-	-
Cresols by HPLC (W)	<0.006	<0.006	<0.06	<0.06	-	-	-
Xylenols by HPLC (W)	<0.008	<0.008	<0.08	<0.08	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Total Monohydric Phenols (W)	<0.016	<0.016	<0.16	<0.16	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.00224	<0.0003	0.0224	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	0.0105	<0.001	0.105	<0.01	-	-	-
Vanadium	0.00479	<0.001	0.0479	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.000481	<0.00001	0.00481	<0.0001	-	-	-
Acenaphthene by GCMS	0.000407	<0.000005	0.00407	<0.00005	-	-	-
Acenaphthylene by GCMS	0.000112	<0.000005	0.00112	<0.00005	-	-	-
Fluoranthene by GCMS	0.00018	<0.000005	0.0018	<0.00005	-	-	-
Anthracene by GCMS	0.0000972	<0.000005	0.000972	<0.00005	-	-	-
Phenanthrene by GCMS	0.000761	<0.000005	0.00761	<0.00005	-	-	-
Fluorene by GCMS	0.00068	<0.000005	0.0068	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.000157	<0.000005	0.00157	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-

Leach Test Information

Date Prepared	06-Sep-2019
pH (pH Units)	8.89
Conductivity (µS/cm)	154.00
Temperature (°C)	19.50
Volume Leachant (Litres)	0.889

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.101	**Natural Moisture Content (%)**	12.4
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	89
Particle Size <4mm	>95%		

Case	
SDG	190828-36
Lab Sample Number(s)	20598655
Sampled Date	20-Aug-2019
Customer Sample Ref.	BHCP105
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
PAH Spec MS - Aqueous (W)							
PAH 16 EPA Total by GCMS	0.00288	<0.000082	0.0288	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	0.126	<0.05	1.26	<0.5	-	-	-
Aliphatics C5-C6	0.02	<0.01	0.2	<0.1	-	-	-
Aliphatics >C6-C8	0.021	<0.01	0.21	<0.1	-	-	-
Aliphatics >C8-C10	0.015	<0.01	0.15	<0.1	-	-	-
Aliphatics >C10-C12	0.033	<0.01	0.33	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	0.011	<0.01	0.11	<0.1	-	-	-
Aromatics >EC10-EC12	0.022	<0.01	0.22	<0.1	-	-	-
Aromatics >EC12-EC16	0.073	<0.01	0.73	<0.1	-	-	-
Aromatics >EC16-EC21	0.032	<0.01	0.32	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	0.105	<0.01	1.05	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	0.231	<0.01	2.31	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	06-Sep-2019
pH (pH Units)	8.89
Conductivity (µS/cm)	154.00
Temperature (°C)	19.50
Volume Leachant (Litres)	0.889

Mcerts Certification does not apply to leachates

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Validated

CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.098	**Natural Moisture Content (%)**	8.81
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	91.9
Particle Size <4mm	>95%		

Case	
SDG	190828-36
Lab Sample Number(s)	20598666
Sampled Date	20-Aug-2019
Customer Sample Ref.	BHCP105
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Ammoniacal Nitrogen as N	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00275	<0.0005	0.0275	<0.005	-	-	-
Free Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Phenol by HPLC (W)	<0.002	<0.002	<0.02	<0.02	-	-	-
Cresols by HPLC (W)	<0.006	<0.006	<0.06	<0.06	-	-	-
Xylenols by HPLC (W)	<0.008	<0.008	<0.08	<0.08	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Total Monohydric Phenols (W)	<0.016	<0.016	<0.16	<0.16	-	-	-
Chromium	0.0018	<0.001	0.018	<0.01	-	-	-
Copper	0.00232	<0.0003	0.0232	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	0.0111	<0.001	0.111	<0.01	-	-	-
Vanadium	0.00722	<0.001	0.0722	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.000316	<0.00001	0.00316	<0.0001	-	-	-
Acenaphthene by GCMS	0.00034	<0.000005	0.0034	<0.00005	-	-	-
Acenaphthylene by GCMS	0.0000944	<0.000005	0.000944	<0.00005	-	-	-
Fluoranthene by GCMS	0.000177	<0.000005	0.00177	<0.00005	-	-	-
Anthracene by GCMS	0.0000896	<0.000005	0.000896	<0.00005	-	-	-
Phenanthrene by GCMS	0.000721	<0.000005	0.00721	<0.00005	-	-	-
Fluorene by GCMS	0.000585	<0.000005	0.00585	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.000149	<0.000005	0.00149	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.00000552	<0.000005	0.0000552	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-

Leach Test Information

Date Prepared	06-Sep-2019
pH (pH Units)	10.02
Conductivity (µS/cm)	147.00
Temperature (°C)	19.40
Volume Leachant (Litres)	0.892

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.098	**Natural Moisture Content (%)**	8.81
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	91.9
Particle Size <4mm	>95%		

Case	
SDG	190828-36
Lab Sample Number(s)	20598666
Sampled Date	20-Aug-2019
Customer Sample Ref.	BHCP105
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Concⁿ in 10:1 eluate (mg/l)		**A_2** 10:1 concⁿ leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
PAH Spec MS - Aqueous (W)							
PAH 16 EPA Total by GCMS	0.00248	<0.000082	0.0248	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	0.172	<0.05	1.72	<0.5	-	-	-
Aliphatics C5-C6	0.025	<0.01	0.25	<0.1	-	-	-
Aliphatics >C6-C8	0.029	<0.01	0.29	<0.1	-	-	-
Aliphatics >C8-C10	0.021	<0.01	0.21	<0.1	-	-	-
Aliphatics >C10-C12	0.046	<0.01	0.46	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	0.016	<0.01	0.16	<0.1	-	-	-
Aromatics >EC10-EC12	0.031	<0.01	0.31	<0.1	-	-	-
Aromatics >EC12-EC16	0.058	<0.01	0.58	<0.1	-	-	-
Aromatics >EC16-EC21	0.027	<0.01	0.27	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	0.085	<0.01	0.85	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	0.257	<0.01	2.57	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	06-Sep-2019
pH (pH Units)	10.02
Conductivity (µS/cm)	147.00
Temperature (°C)	19.40
Volume Leachant (Litres)	0.892

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.098	**Natural Moisture Content (%)**	8.23
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	92.4
Particle Size <4mm	>95%		

Case	
SDG	190828-36
Lab Sample Number(s)	20598682
Sampled Date	20-Aug-2019
Customer Sample Ref.	WSBP105
Depth (m)	0.30 - 0.30

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Ammoniacal Nitrogen as N	0.0117	<0.01	0.117	<0.1	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	<0.003	<0.003	<0.03	<0.03	-	-	-
Free Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Phenol by HPLC (W)	<0.002	<0.002	<0.02	<0.02	-	-	-
Cresols by HPLC (W)	<0.006	<0.006	<0.06	<0.06	-	-	-
Xylenols by HPLC (W)	<0.008	<0.008	<0.08	<0.08	-	-	-
Cadmium	<0.00048	<0.00048	<0.0048	<0.0048	-	-	-
Total Monohydric Phenols (W)	<0.016	<0.016	<0.16	<0.16	-	-	-
Chromium	<0.006	<0.006	<0.06	<0.06	-	-	-
Copper	<0.0018	<0.0018	<0.018	<0.018	-	-	-
Lead	<0.0012	<0.0012	<0.012	<0.012	-	-	-
Manganese	<0.018	<0.018	<0.18	<0.18	-	-	-
Nickel	<0.0024	<0.0024	<0.024	<0.024	-	-	-
Selenium	0.0107	<0.006	0.107	<0.06	-	-	-
Vanadium	0.0394	<0.006	0.394	<0.06	-	-	-
Zinc	<0.006	<0.006	<0.06	<0.06	-	-	-
Iron (Dis.Filt) mg/l	<0.114	<0.114	<1.14	<1.14	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.000269	<0.00001	0.00269	<0.0001	-	-	-
Acenaphthene by GCMS	0.00165	<0.000005	0.0165	<0.00005	-	-	-
Acenaphthylene by GCMS	0.0000571	<0.000005	0.000571	<0.00005	-	-	-
Fluoranthene by GCMS	0.000999	<0.000005	0.00999	<0.00005	-	-	-
Anthracene by GCMS	0.000303	<0.000005	0.00303	<0.00005	-	-	-
Phenanthrene by GCMS	0.000861	<0.000005	0.00861	<0.00005	-	-	-
Fluorene by GCMS	0.000568	<0.000005	0.00568	<0.00005	-	-	-
Chrysene by GCMS	0.0000413	<0.000005	0.000413	<0.00005	-	-	-
Pyrene by GCMS	0.000636	<0.000005	0.00636	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.0000225	<0.000005	0.000225	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.0000127	<0.000005	0.000127	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.00000515	<0.000005	0.0000515	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.00000608	<0.000002	0.0000608	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-

Leach Test Information

Date Prepared	06-Sep-2019
pH (pH Units)	11.07
Conductivity (µS/cm)	636.00
Temperature (°C)	19.70
Volume Leachant (Litres)	0.893

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.098	**Natural Moisture Content (%)**	8.23
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	92.4
Particle Size <4mm	>95%		

Case	
SDG	190828-36
Lab Sample Number(s)	20598682
Sampled Date	20-Aug-2019
Customer Sample Ref.	WSBP105
Depth (m)	0.30 - 0.30

Eluate Analysis	**C_2** Concⁿ in 10:1 eluate (mg/l)		**A_2** 10:1 concⁿ leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
PAH Spec MS - Aqueous (W)							
PAH 16 EPA Total by GCMS	0.00543	<0.000082	0.0543	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	0.131	<0.05	1.31	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	0.011	<0.01	0.11	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	0.078	<0.01	0.78	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	0.022	<0.01	0.22	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	0.04	<0.01	0.4	<0.1	-	-	-
Aromatics >EC16-EC21	0.052	<0.01	0.52	<0.1	-	-	-
Aromatics >EC21-EC35	0.016	<0.01	0.16	<0.1	-	-	-
Total Aromatics >EC12-EC35	0.108	<0.01	1.08	<0.1	-	-	-
Benzene by GC	0.078	<0.007	0.78	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	0.239	<0.01	2.39	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	0.011	<0.008	0.11	<0.08	-	-	-
o Xylene by GC	0.005	<0.003	0.05	<0.03	-	-	-
Sum m&p and o Xylene by GC	0.016	<0.011	0.16	<0.11	-	-	-
Sum of BTEX by GC	0.094	<0.028	0.94	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	06-Sep-2019
pH (pH Units)	11.07
Conductivity (µS/cm)	636.00
Temperature (°C)	19.70
Volume Leachant (Litres)	0.893

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.096	**Natural Moisture Content (%)**	6.95
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	93.5
Particle Size <4mm	>95%		

Case	
SDG	190828-36
Lab Sample Number(s)	20598696
Sampled Date	20-Aug-2019
Customer Sample Ref.	WSBP105
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Mercury Dissolved (CVAF)	0.000127	<0.00001	0.00127	<0.0001	-	-	-
Ammoniacal Nitrogen as N	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.0019	<0.0005	0.019	<0.005	-	-	-
Free Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Phenol by HPLC (W)	<0.002	<0.002	<0.02	<0.02	-	-	-
Cresols by HPLC (W)	0.01	<0.006	0.1	<0.06	-	-	-
Xylenols by HPLC (W)	<0.008	<0.008	<0.08	<0.08	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Total Monohydric Phenols (W)	<0.016	<0.016	<0.16	<0.16	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	<0.0003	<0.0003	<0.003	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	0.00368	<0.003	0.0368	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	0.00335	<0.001	0.0335	<0.01	-	-	-
Vanadium	0.178	<0.001	1.78	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000106	<0.00001	0.000106	<0.0001	-	-	-
Acenaphthene by GCMS	0.00293	<0.000005	0.0293	<0.00005	-	-	-
Acenaphthylene by GCMS	0.0000933	<0.000005	0.000933	<0.00005	-	-	-
Fluoranthene by GCMS	0.00214	<0.000005	0.0214	<0.00005	-	-	-
Anthracene by GCMS	0.0000399	<0.000005	0.000399	<0.00005	-	-	-
Phenanthrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluorene by GCMS	0.000109	<0.000005	0.00109	<0.00005	-	-	-
Chrysene by GCMS	0.0000769	<0.000005	0.000769	<0.00005	-	-	-
Pyrene by GCMS	0.00158	<0.000005	0.0158	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.0000592	<0.000005	0.000592	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.0000223	<0.000005	0.000223	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.000013	<0.000005	0.00013	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.0000124	<0.000002	0.000124	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-

Leach Test Information

Date Prepared	05-Sep-2019
pH (pH Units)	10.55
Conductivity (µS/cm)	332.00
Temperature (°C)	19.70
Volume Leachant (Litres)	0.894

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.096	**Natural Moisture Content (%)**	6.95
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	93.5
Particle Size <4mm	>95%		

Case	
SDG	190828-36
Lab Sample Number(s)	20598696
Sampled Date	20-Aug-2019
Customer Sample Ref.	WSBP105
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
PAH Spec MS - Aqueous (W)							
PAH 16 EPA Total by GCMS	0.00708	<0.000082	0.0708	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	0.013	<0.01	0.13	<0.1	-	-	-
Aromatics >EC16-EC21	0.025	<0.01	0.25	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	0.038	<0.01	0.38	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	0.042	<0.01	0.42	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	05-Sep-2019
pH (pH Units)	10.55
Conductivity (µS/cm)	332.00
Temperature (°C)	19.70
Volume Leachant (Litres)	0.894

Mcerts Certification does not apply to leachates

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Validated

CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.096	**Natural Moisture Content (%)**	6.27
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	94.1
Particle Size <4mm	>95%		

Case	
SDG	190828-36
Lab Sample Number(s)	20598715
Sampled Date	20-Aug-2019
Customer Sample Ref.	CPBP101
Depth (m)	0.30 - 0.30

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Mercury Dissolved (CVAF)	0.0000253	<0.00001	0.000253	<0.0001	-	-	-
Ammoniacal Nitrogen as N	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.000815	<0.0005	0.00815	<0.005	-	-	-
Free Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Phenol by HPLC (W)	<0.002	<0.002	<0.02	<0.02	-	-	-
Cresols by HPLC (W)	<0.006	<0.006	<0.06	<0.06	-	-	-
Xylenols by HPLC (W)	<0.008	<0.008	<0.08	<0.08	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Total Monohydric Phenols (W)	<0.016	<0.016	<0.16	<0.16	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.00409	<0.0003	0.0409	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.00123	<0.0004	0.0123	<0.004	-	-	-
Selenium	0.00212	<0.001	0.0212	<0.01	-	-	-
Vanadium	0.0421	<0.001	0.421	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.00228	<0.00001	0.0228	<0.0001	-	-	-
Acenaphthene by GCMS	0.00173	<0.000005	0.0173	<0.00005	-	-	-
Acenaphthylene by GCMS	0.000104	<0.000005	0.00104	<0.00005	-	-	-
Fluoranthene by GCMS	0.00346	<0.000005	0.0346	<0.00005	-	-	-
Anthracene by GCMS	0.00113	<0.000005	0.0113	<0.00005	-	-	-
Phenanthrene by GCMS	0.0122	<0.000005	0.122	<0.00005	-	-	-
Fluorene by GCMS	0.00183	<0.000005	0.0183	<0.00005	-	-	-
Chrysene by GCMS	0.0000968	<0.000005	0.000968	<0.00005	-	-	-
Pyrene by GCMS	0.00169	<0.000005	0.0169	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.000134	<0.000005	0.00134	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.0000177	<0.000005	0.000177	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.00000906	<0.000005	0.0000906	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.00000823	<0.000002	0.0000823	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-

Leach Test Information

Date Prepared	06-Sep-2019
pH (pH Units)	11.63
Conductivity (µS/cm)	819.00
Temperature (°C)	17.80
Volume Leachant (Litres)	0.894

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.096	**Natural Moisture Content (%)**	6.27
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	94.1
Particle Size <4mm	>95%		

Case	
SDG	190828-36
Lab Sample Number(s)	20598715
Sampled Date	20-Aug-2019
Customer Sample Ref.	CPBP101
Depth (m)	0.30 - 0.30

Eluate Analysis	**C_2** Concⁿ in 10:1 eluate (mg/l)		**A_2** 10:1 concⁿ leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
PAH Spec MS - Aqueous (W)							
PAH 16 EPA Total by GCMS	0.0247	<0.000082	0.247	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	0.034	<0.01	0.34	<0.1	-	-	-
Aromatics >EC16-EC21	0.057	<0.01	0.57	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	0.091	<0.01	0.91	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	0.094	<0.01	0.94	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	06-Sep-2019
pH (pH Units)	11.63
Conductivity (µS/cm)	819.00
Temperature (°C)	17.80
Volume Leachant (Litres)	0.894

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.099	**Natural Moisture Content (%)**	10.3
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	90.7
Particle Size <4mm	>95%		

Case	
SDG	190828-36
Lab Sample Number(s)	20598729
Sampled Date	20-Aug-2019
Customer Sample Ref.	CPBP101
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Ammoniacal Nitrogen as N	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	<0.0005	<0.0005	<0.005	<0.005	-	-	-
Free Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Phenol by HPLC (W)	<0.002	<0.002	<0.02	<0.02	-	-	-
Cresols by HPLC (W)	<0.006	<0.006	<0.06	<0.06	-	-	-
Xylenols by HPLC (W)	<0.008	<0.008	<0.08	<0.08	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Total Monohydric Phenols (W)	<0.016	<0.016	<0.16	<0.16	-	-	-
Chromium	0.00134	<0.001	0.0134	<0.01	-	-	-
Copper	0.00192	<0.0003	0.0192	<0.003	-	-	-
Lead	0.00111	<0.0002	0.0111	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.00052	<0.0004	0.0052	<0.004	-	-	-
Selenium	0.00169	<0.001	0.0169	<0.01	-	-	-
Vanadium	0.00381	<0.001	0.0381	<0.01	-	-	-
Zinc	0.00164	<0.001	0.0164	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0142	<0.00001	0.142	<0.0001	-	-	-
Acenaphthene by GCMS	0.00337	<0.000005	0.0337	<0.00005	-	-	-
Acenaphthylene by GCMS	0.000254	<0.000005	0.00254	<0.00005	-	-	-
Fluoranthene by GCMS	0.00538	<0.000005	0.0538	<0.00005	-	-	-
Anthracene by GCMS	0.00287	<0.000005	0.0287	<0.00005	-	-	-
Phenanthrene by GCMS	0.0193	<0.000005	0.193	<0.00005	-	-	-
Fluorene by GCMS	0.00381	<0.000005	0.0381	<0.00005	-	-	-
Chrysene by GCMS	0.000192	<0.000005	0.00192	<0.00005	-	-	-
Pyrene by GCMS	0.00279	<0.000005	0.0279	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.000163	<0.000005	0.00163	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.0000231	<0.000005	0.000231	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.0000105	<0.000005	0.000105	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.0000156	<0.000002	0.000156	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	0.00000693	<0.000005	0.0000693	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-

Leach Test Information

Date Prepared	06-Sep-2019
pH (pH Units)	11.52
Conductivity (µS/cm)	1,490.00
Temperature (°C)	19.70
Volume Leachant (Litres)	0.891

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.099	**Natural Moisture Content (%)**	10.3
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	90.7
Particle Size <4mm	>95%		

Case	
SDG	190828-36
Lab Sample Number(s)	20598729
Sampled Date	20-Aug-2019
Customer Sample Ref.	CPBP101
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
PAH Spec MS - Aqueous (W)							
PAH 16 EPA Total by GCMS	0.0525	<0.000082	0.525	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	0.382	<0.05	3.82	<0.5	-	-	-
Aliphatics C5-C6	0.028	<0.01	0.28	<0.1	-	-	-
Aliphatics >C6-C8	0.033	<0.01	0.33	<0.1	-	-	-
Aliphatics >C8-C10	0.037	<0.01	0.37	<0.1	-	-	-
Aliphatics >C10-C12	0.119	<0.01	1.19	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	0.044	<0.01	0.44	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	0.034	<0.01	0.34	<0.1	-	-	-
Aromatics >EC10-EC12	0.079	<0.01	0.79	<0.1	-	-	-
Aromatics >EC12-EC16	0.148	<0.01	1.48	<0.1	-	-	-
Aromatics >EC16-EC21	0.146	<0.01	1.46	<0.1	-	-	-
Aromatics >EC21-EC35	0.043	<0.01	0.43	<0.1	-	-	-
Total Aromatics >EC12-EC35	0.337	<0.01	3.37	<0.1	-	-	-
Benzene by GC	0.044	<0.007	0.44	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	0.719	<0.01	7.19	<0.1	-	-	-
Toluene by GC	0.007	<0.004	0.07	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	0.004	<0.003	0.04	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	0.051	<0.028	0.51	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	06-Sep-2019
pH (pH Units)	11.52
Conductivity (µS/cm)	1,490.00
Temperature (°C)	19.70
Volume Leachant (Litres)	0.891

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.096	**Natural Moisture Content (%)**	7.18
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	93.3
Particle Size <4mm	>95%		

Case	
SDG	190828-36
Lab Sample Number(s)	20598741
Sampled Date	20-Aug-2019
Customer Sample Ref.	CPBP101
Depth (m)	1.50 - 1.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Mercury Dissolved (CVAF)	0.0000174	<0.00001	0.000174	<0.0001	-	-	-
Ammoniacal Nitrogen as N	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	<0.0005	<0.0005	<0.005	<0.005	-	-	-
Free Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Phenol by HPLC (W)	<0.002	<0.002	<0.02	<0.02	-	-	-
Cresols by HPLC (W)	<0.006	<0.006	<0.06	<0.06	-	-	-
Xylenols by HPLC (W)	<0.008	<0.008	<0.08	<0.08	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Total Monohydric Phenols (W)	<0.016	<0.016	<0.16	<0.16	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.00275	<0.0003	0.0275	<0.003	-	-	-
Lead	0.0013	<0.0002	0.013	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.000596	<0.0004	0.00596	<0.004	-	-	-
Selenium	0.00188	<0.001	0.0188	<0.01	-	-	-
Vanadium	0.0039	<0.001	0.039	<0.01	-	-	-
Zinc	0.00203	<0.001	0.0203	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0134	<0.00001	0.134	<0.0001	-	-	-
Acenaphthene by GCMS	0.00313	<0.000005	0.0313	<0.00005	-	-	-
Acenaphthylene by GCMS	0.000242	<0.000005	0.00242	<0.00005	-	-	-
Fluoranthene by GCMS	0.00454	<0.000005	0.0454	<0.00005	-	-	-
Anthracene by GCMS	0.0024	<0.000005	0.024	<0.00005	-	-	-
Phenanthrene by GCMS	0.0164	<0.000005	0.164	<0.00005	-	-	-
Fluorene by GCMS	0.00328	<0.000005	0.0328	<0.00005	-	-	-
Chrysene by GCMS	0.000156	<0.000005	0.00156	<0.00005	-	-	-
Pyrene by GCMS	0.00241	<0.000005	0.0241	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.000184	<0.000005	0.00184	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.0000323	<0.000005	0.000323	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.0000177	<0.000005	0.000177	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.0000148	<0.000002	0.000148	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-

Leach Test Information

Date Prepared	06-Sep-2019
pH (pH Units)	11.42
Conductivity (µS/cm)	1,580.00
Temperature (°C)	19.60
Volume Leachant (Litres)	0.894

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.096	**Natural Moisture Content (%)**	7.18
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	93.3
Particle Size <4mm	>95%		

Case	
SDG	190828-36
Lab Sample Number(s)	20598741
Sampled Date	20-Aug-2019
Customer Sample Ref.	CPBP101
Depth (m)	1.50 - 1.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
PAH Spec MS - Aqueous (W)							
PAH 16 EPA Total by GCMS	0.0462	<0.000082	0.462	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	0.323	<0.05	3.23	<0.5	-	-	-
Aliphatics C5-C6	0.028	<0.01	0.28	<0.1	-	-	-
Aliphatics >C6-C8	0.031	<0.01	0.31	<0.1	-	-	-
Aliphatics >C8-C10	0.031	<0.01	0.31	<0.1	-	-	-
Aliphatics >C10-C12	0.089	<0.01	0.89	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	0.045	<0.01	0.45	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	0.033	<0.01	0.33	<0.1	-	-	-
Aromatics >EC10-EC12	0.059	<0.01	0.59	<0.1	-	-	-
Aromatics >EC12-EC16	0.157	<0.01	1.57	<0.1	-	-	-
Aromatics >EC16-EC21	0.161	<0.01	1.61	<0.1	-	-	-
Aromatics >EC21-EC35	0.044	<0.01	0.44	<0.1	-	-	-
Total Aromatics >EC12-EC35	0.362	<0.01	3.62	<0.1	-	-	-
Benzene by GC	0.045	<0.007	0.45	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	0.685	<0.01	6.85	<0.1	-	-	-
Toluene by GC	0.007	<0.004	0.07	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	0.005	<0.003	0.05	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	0.052	<0.028	0.52	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	06-Sep-2019
pH (pH Units)	11.42
Conductivity (µS/cm)	1,580.00
Temperature (°C)	19.60
Volume Leachant (Litres)	0.894

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.118	**Natural Moisture Content (%)**	31.6
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	76
Particle Size <4mm	>95%		

Case	
SDG	190828-36
Lab Sample Number(s)	20598757
Sampled Date	20-Aug-2019
Customer Sample Ref.	WSBP108
Depth (m)	2.10 - 2.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Ammoniacal Nitrogen as N	1.98	<0.01	19.8	<0.1	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00287	<0.0005	0.0287	<0.005	-	-	-
Free Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Phenol by HPLC (W)	<0.002	<0.002	<0.02	<0.02	-	-	-
Cresols by HPLC (W)	<0.006	<0.006	<0.06	<0.06	-	-	-
Xylenols by HPLC (W)	<0.008	<0.008	<0.08	<0.08	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Total Monohydric Phenols (W)	<0.016	<0.016	<0.16	<0.16	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.00218	<0.0003	0.0218	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	0.0168	<0.003	0.168	<0.03	-	-	-
Nickel	0.000842	<0.0004	0.00842	<0.004	-	-	-
Selenium	0.00139	<0.001	0.0139	<0.01	-	-	-
Vanadium	0.00167	<0.001	0.0167	<0.01	-	-	-
Zinc	0.00648	<0.001	0.0648	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.199	<0.019	1.99	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000112	<0.00001	0.000112	<0.0001	-	-	-
Acenaphthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.00012	<0.000005	0.0012	<0.00005	-	-	-
Anthracene by GCMS	0.00000865	<0.000005	0.0000865	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000886	<0.000005	0.000886	<0.00005	-	-	-
Fluorene by GCMS	0.00000527	<0.000005	0.0000527	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.0000737	<0.000005	0.000737	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-

Leach Test Information

Date Prepared	06-Sep-2019
pH (pH Units)	8.52
Conductivity (µS/cm)	171.00
Temperature (°C)	19.40
Volume Leachant (Litres)	0.872

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.118	**Natural Moisture Content (%)**	31.6
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	76
Particle Size <4mm	>95%		

Case	
SDG	190828-36
Lab Sample Number(s)	20598757
Sampled Date	20-Aug-2019
Customer Sample Ref.	WSBP108
Depth (m)	2.10 - 2.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
PAH Spec MS - Aqueous (W)							
PAH 16 EPA Total by GCMS	0.000307	<0.000082	0.00307	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	0.011	<0.01	0.11	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	0.006	<0.005	0.06	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	06-Sep-2019
pH (pH Units)	8.52
Conductivity (µS/cm)	171.00
Temperature (°C)	19.40
Volume Leachant (Litres)	0.872

Mcerts Certification does not apply to leachates

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Validated

CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.106	**Natural Moisture Content (%)**	17.6
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	85
Particle Size <4mm	>95%		

Case	
SDG	190828-36
Lab Sample Number(s)	20598767
Sampled Date	21-Aug-2019
Customer Sample Ref.	WSBP109
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Ammoniacal Nitrogen as N	0.709	<0.01	7.09	<0.1	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00264	<0.0005	0.0264	<0.005	-	-	-
Free Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Phenol by HPLC (W)	<0.002	<0.002	<0.02	<0.02	-	-	-
Cresols by HPLC (W)	<0.006	<0.006	<0.06	<0.06	-	-	-
Xylenols by HPLC (W)	0.01	<0.008	0.1	<0.08	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Total Monohydric Phenols (W)	<0.016	<0.016	<0.16	<0.16	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	<0.0003	<0.0003	<0.003	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	0.567	<0.003	5.67	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	<0.001	<0.001	<0.01	<0.01	-	-	-
Vanadium	0.0024	<0.001	0.024	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000177	<0.00001	0.000177	<0.0001	-	-	-
Acenaphthene by GCMS	0.000425	<0.000005	0.00425	<0.00005	-	-	-
Acenaphthylene by GCMS	0.0000128	<0.000005	0.000128	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000168	<0.000005	0.000168	<0.00005	-	-	-
Anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000183	<0.000005	0.000183	<0.00005	-	-	-
Fluorene by GCMS	0.0000688	<0.000005	0.000688	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.0000146	<0.000005	0.000146	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-

Leach Test Information

Date Prepared	05-Sep-2019
pH (pH Units)	7.68
Conductivity (µS/cm)	131.00
Temperature (°C)	19.50
Volume Leachant (Litres)	0.884

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.106	**Natural Moisture Content (%)**	17.6
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	85
Particle Size <4mm	>95%		

Case	
SDG	190828-36
Lab Sample Number(s)	20598767
Sampled Date	21-Aug-2019
Customer Sample Ref.	WSBP109
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
PAH Spec MS - Aqueous (W)							
PAH 16 EPA Total by GCMS	0.000574	<0.000082	0.00574	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	1.84	<0.05	18.4	<0.5	-	-	-
Aliphatics C5-C6	0.012	<0.01	0.12	<0.1	-	-	-
Aliphatics >C6-C8	0.045	<0.01	0.45	<0.1	-	-	-
Aliphatics >C8-C10	0.107	<0.01	1.07	<0.1	-	-	-
Aliphatics >C10-C12	0.901	<0.01	9.01	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	0.03	<0.01	0.3	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	0.141	<0.01	1.41	<0.1	-	-	-
Aromatics >EC10-EC12	0.601	<0.01	6.01	<0.1	-	-	-
Aromatics >EC12-EC16	0.053	<0.01	0.53	<0.1	-	-	-
Aromatics >EC16-EC21	0.071	<0.01	0.71	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	0.124	<0.01	1.24	<0.1	-	-	-
Benzene by GC	0.03	<0.007	0.3	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	1.97	<0.01	19.7	<0.1	-	-	-
Toluene by GC	0.006	<0.004	0.06	<0.04	-	-	-
Ethylbenzene by GC	0.011	<0.005	0.11	<0.05	-	-	-
m & p Xylene by GC	0.052	<0.008	0.52	<0.08	-	-	-
o Xylene by GC	0.006	<0.003	0.06	<0.03	-	-	-
Sum m&p and o Xylene by GC	0.058	<0.011	0.58	<0.11	-	-	-
Sum of BTEX by GC	0.105	<0.028	1.05	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	05-Sep-2019
pH (pH Units)	7.68
Conductivity (µS/cm)	131.00
Temperature (°C)	19.50
Volume Leachant (Litres)	0.884

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.450	**Natural Moisture Content (%)**	400
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	20
Particle Size <4mm	>95%		

Case	
SDG	190828-36
Lab Sample Number(s)	20598778
Sampled Date	20-Aug-2019
Customer Sample Ref.	WSBP108
Depth (m)	3.40 - 4.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Ammoniacal Nitrogen as N	1.99	<0.01	19.9	<0.1	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00739	<0.0005	0.0739	<0.005	-	-	-
Free Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Phenol by HPLC (W)	<0.002	<0.002	<0.02	<0.02	-	-	-
Cresols by HPLC (W)	<0.006	<0.006	<0.06	<0.06	-	-	-
Xylenols by HPLC (W)	<0.008	<0.008	<0.08	<0.08	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Total Monohydric Phenols (W)	<0.016	<0.016	<0.16	<0.16	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.00357	<0.0003	0.0357	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	0.246	<0.003	2.46	<0.03	-	-	-
Nickel	0.00103	<0.0004	0.0103	<0.004	-	-	-
Selenium	<0.001	<0.001	<0.01	<0.01	-	-	-
Vanadium	<0.001	<0.001	<0.01	<0.01	-	-	-
Zinc	0.012	<0.001	0.12	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000203	<0.00001	0.000203	<0.0001	-	-	-
Acenaphthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.000068	<0.000005	0.00068	<0.00005	-	-	-
Anthracene by GCMS	0.00000611	<0.000005	0.0000611	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000314	<0.000005	0.000314	<0.00005	-	-	-
Fluorene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.000035	<0.000005	0.00035	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-

Leach Test Information

Date Prepared	05-Sep-2019
pH (pH Units)	7.64
Conductivity (µS/cm)	642.00
Temperature (°C)	19.50
Volume Leachant (Litres)	0.540

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.450	**Natural Moisture Content (%)**	400
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	20
Particle Size <4mm	>95%		

Case	
SDG	190828-36
Lab Sample Number(s)	20598778
Sampled Date	20-Aug-2019
Customer Sample Ref.	WSBP108
Depth (m)	3.40 - 4.00

Eluate Analysis	**C_2** Concⁿ in 10:1 eluate (mg/l)		**A_2** 10:1 concⁿ leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
PAH Spec MS - Aqueous (W)							
PAH 16 EPA Total by GCMS	0.000161	<0.000082	0.00161	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	05-Sep-2019
pH (pH Units)	7.64
Conductivity (µS/cm)	642.00
Temperature (°C)	19.50
Volume Leachant (Litres)	0.540

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.209	**Natural Moisture Content (%)**	133
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	43
Particle Size <4mm	>95%		

Case	
SDG	190828-36
Lab Sample Number(s)	20598788
Sampled Date	20-Aug-2019
Customer Sample Ref.	CPB11
Depth (m)	3.50 - 3.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Ammoniacal Nitrogen as N	4.85	<0.01	48.5	<0.1	-	-	-
Total Cyanide (W)	0.07	<0.05	0.7	<0.5	-	-	-
Arsenic	0.00398	<0.0005	0.0398	<0.005	-	-	-
Free Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Phenol by HPLC (W)	<0.002	<0.002	<0.02	<0.02	-	-	-
Cresols by HPLC (W)	<0.006	<0.006	<0.06	<0.06	-	-	-
Xylenols by HPLC (W)	<0.008	<0.008	<0.08	<0.08	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Total Monohydric Phenols (W)	<0.016	<0.016	<0.16	<0.16	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.00228	<0.0003	0.0228	<0.003	-	-	-
Lead	0.000708	<0.0002	0.00708	<0.002	-	-	-
Manganese	0.0299	<0.003	0.299	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	0.0151	<0.001	0.151	<0.01	-	-	-
Vanadium	0.0079	<0.001	0.079	<0.01	-	-	-
Zinc	0.044	<0.001	0.44	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.268	<0.019	2.68	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000586	<0.00001	0.000586	<0.0001	-	-	-
Acenaphthene by GCMS	0.00000597	<0.000005	0.0000597	<0.00005	-	-	-
Acenaphthylene by GCMS	0.0000497	<0.000005	0.000497	<0.00005	-	-	-
Fluoranthene by GCMS	0.000276	<0.000005	0.00276	<0.00005	-	-	-
Anthracene by GCMS	0.0000221	<0.000005	0.000221	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000983	<0.000005	0.000983	<0.00005	-	-	-
Fluorene by GCMS	0.0000261	<0.000005	0.000261	<0.00005	-	-	-
Chrysene by GCMS	0.0000749	<0.000005	0.000749	<0.00005	-	-	-
Pyrene by GCMS	0.000207	<0.000005	0.00207	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.0000995	<0.000005	0.000995	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.000363	<0.000005	0.00363	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.000116	<0.000005	0.00116	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.000213	<0.000002	0.00213	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	0.0000454	<0.000005	0.000454	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	0.000161	<0.000005	0.00161	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	0.00014	<0.000005	0.0014	<0.00005	-	-	-

Leach Test Information

Date Prepared	05-Sep-2019
pH (pH Units)	8.28
Conductivity (µS/cm)	695.00
Temperature (°C)	19.70
Volume Leachant (Litres)	0.780

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.209	**Natural Moisture Content (%)**	133
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	43
Particle Size <4mm	>95%		

Case	
SDG	190828-36
Lab Sample Number(s)	20598788
Sampled Date	20-Aug-2019
Customer Sample Ref.	CPB11
Depth (m)	3.50 - 3.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
PAH Spec MS - Aqueous (W)							
PAH 16 EPA Total by GCMS	0.00196	<0.000082	0.0196	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	05-Sep-2019
pH (pH Units)	8.28
Conductivity (µS/cm)	695.00
Temperature (°C)	19.70
Volume Leachant (Litres)	0.780

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.137	**Natural Moisture Content (%)**	51.5
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	66
Particle Size <4mm	>95%		

Case	
SDG	190828-36
Lab Sample Number(s)	20598798
Sampled Date	20-Aug-2019
Customer Sample Ref.	CPB11
Depth (m)	5.50 - 5.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Ammoniacal Nitrogen as N	1.46	<0.01	14.6	<0.1	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00285	<0.0005	0.0285	<0.005	-	-	-
Free Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Phenol by HPLC (W)	<0.002	<0.002	<0.02	<0.02	-	-	-
Cresols by HPLC (W)	<0.006	<0.006	<0.06	<0.06	-	-	-
Xylenols by HPLC (W)	<0.008	<0.008	<0.08	<0.08	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Total Monohydric Phenols (W)	<0.016	<0.016	<0.16	<0.16	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.00152	<0.0003	0.0152	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.00106	<0.0004	0.0106	<0.004	-	-	-
Selenium	0.00108	<0.001	0.0108	<0.01	-	-	-
Vanadium	0.00326	<0.001	0.0326	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Acenaphthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000379	<0.000005	0.000379	<0.00005	-	-	-
Anthracene by GCMS	0.00000832	<0.000005	0.0000832	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000108	<0.000005	0.000108	<0.00005	-	-	-
Fluorene by GCMS	0.0000143	<0.000005	0.000143	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.0000244	<0.000005	0.000244	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-

Leach Test Information

Date Prepared	06-Sep-2019
pH (pH Units)	8.55
Conductivity (µS/cm)	302.00
Temperature (°C)	19.30
Volume Leachant (Litres)	0.854

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.137	**Natural Moisture Content (%)**	51.5
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	66
Particle Size <4mm	>95%		

Case	
SDG	190828-36
Lab Sample Number(s)	20598798
Sampled Date	20-Aug-2019
Customer Sample Ref.	CPB11
Depth (m)	5.50 - 5.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
PAH Spec MS - Aqueous (W)							
PAH 16 EPA Total by GCMS	0.0000957	<0.000082	0.000957	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	06-Sep-2019
pH (pH Units)	8.55
Conductivity (µS/cm)	302.00
Temperature (°C)	19.30
Volume Leachant (Litres)	0.854

Mcerts Certification does not apply to leachates

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Validated

CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.096	**Natural Moisture Content (%)**	6.61
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	93.8
Particle Size <4mm	>95%		

Case	
SDG	190828-36
Lab Sample Number(s)	20598808
Sampled Date	20-Aug-2019
Customer Sample Ref.	CPB11
Depth (m)	9.50 - 9.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Ammoniacal Nitrogen as N	0.0781	<0.01	0.781	<0.1	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00246	<0.0005	0.0246	<0.005	-	-	-
Free Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Phenol by HPLC (W)	<0.002	<0.002	<0.02	<0.02	-	-	-
Cresols by HPLC (W)	<0.006	<0.006	<0.06	<0.06	-	-	-
Xylenols by HPLC (W)	<0.008	<0.008	<0.08	<0.08	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Total Monohydric Phenols (W)	<0.016	<0.016	<0.16	<0.16	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.0013	<0.0003	0.013	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	0.0326	<0.003	0.326	<0.03	-	-	-
Nickel	0.00105	<0.0004	0.0105	<0.004	-	-	-
Selenium	0.00123	<0.001	0.0123	<0.01	-	-	-
Vanadium	0.00206	<0.001	0.0206	<0.01	-	-	-
Zinc	0.013	<0.001	0.13	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Acenaphthene by GCMS	0.000132	<0.000005	0.00132	<0.00005	-	-	-
Acenaphthylene by GCMS	0.0000302	<0.000005	0.000302	<0.00005	-	-	-
Fluoranthene by GCMS	0.000764	<0.000005	0.00764	<0.00005	-	-	-
Anthracene by GCMS	0.0000169	<0.000005	0.000169	<0.00005	-	-	-
Phenanthrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluorene by GCMS	0.0000458	<0.000005	0.000458	<0.00005	-	-	-
Chrysene by GCMS	0.0000289	<0.000005	0.000289	<0.00005	-	-	-
Pyrene by GCMS	0.000551	<0.000005	0.00551	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.000029	<0.000005	0.00029	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.0000189	<0.000005	0.000189	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.00000987	<0.000005	0.0000987	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.0000099	<0.000002	0.000099	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-

Leach Test Information

Date Prepared	05-Sep-2019
pH (pH Units)	8.01
Conductivity (µS/cm)	181.00
Temperature (°C)	19.60
Volume Leachant (Litres)	0.894

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.096	**Natural Moisture Content (%)**	6.61
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	93.8
Particle Size <4mm	>95%		

Case	
SDG	190828-36
Lab Sample Number(s)	20598808
Sampled Date	20-Aug-2019
Customer Sample Ref.	CPB11
Depth (m)	9.50 - 9.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
PAH Spec MS - Aqueous (W)							
PAH 16 EPA Total by GCMS	0.00164	<0.000082	0.0164	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	05-Sep-2019
pH (pH Units)	8.01
Conductivity (µS/cm)	181.00
Temperature (°C)	19.60
Volume Leachant (Litres)	0.894

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.125	**Natural Moisture Content (%)**	39
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	72
Particle Size <4mm	>95%		

Case	
SDG	190828-36
Lab Sample Number(s)	20598817
Sampled Date	20-Aug-2019
Customer Sample Ref.	CPBR3
Depth (m)	9.10 - 9.10

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Ammoniacal Nitrogen as N	1.16	<0.01	11.6	<0.1	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00268	<0.0005	0.0268	<0.005	-	-	-
Free Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Phenol by HPLC (W)	<0.002	<0.002	<0.02	<0.02	-	-	-
Cresols by HPLC (W)	<0.006	<0.006	<0.06	<0.06	-	-	-
Xylenols by HPLC (W)	<0.008	<0.008	<0.08	<0.08	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Total Monohydric Phenols (W)	<0.016	<0.016	<0.16	<0.16	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.00103	<0.0003	0.0103	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	0.0183	<0.003	0.183	<0.03	-	-	-
Nickel	0.000557	<0.0004	0.00557	<0.004	-	-	-
Selenium	<0.001	<0.001	<0.01	<0.01	-	-	-
Vanadium	0.00612	<0.001	0.0612	<0.01	-	-	-
Zinc	0.00164	<0.001	0.0164	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000101	<0.00001	0.000101	<0.0001	-	-	-
Acenaphthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000305	<0.000005	0.000305	<0.00005	-	-	-
Anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000209	<0.000005	0.000209	<0.00005	-	-	-
Fluorene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.0000194	<0.000005	0.000194	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-

Leach Test Information

Date Prepared	06-Sep-2019
pH (pH Units)	8.70
Conductivity (µS/cm)	156.00
Temperature (°C)	19.40
Volume Leachant (Litres)	0.865

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.125	**Natural Moisture Content (%)**	39
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	72
Particle Size <4mm	>95%		

Case	
SDG	190828-36
Lab Sample Number(s)	20598817
Sampled Date	20-Aug-2019
Customer Sample Ref.	CPBR3
Depth (m)	9.10 - 9.10

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
PAH Spec MS - Aqueous (W)							
PAH 16 EPA Total by GCMS	<0.000082	<0.000082	<0.00082	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	06-Sep-2019
pH (pH Units)	8.70
Conductivity (µS/cm)	156.00
Temperature (°C)	19.40
Volume Leachant (Litres)	0.865

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.166	**Natural Moisture Content (%)**	85.2
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	54
Particle Size <4mm	>95%		

Case	
SDG	190828-36
Lab Sample Number(s)	20598824
Sampled Date	21-Aug-2019
Customer Sample Ref.	CPB7
Depth (m)	2.70 - 2.70

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Mercury Dissolved (CVAF)	0.0000165	<0.00001	0.000165	<0.0001	-	-	-
Ammoniacal Nitrogen as N	14.8	<0.01	148	<0.1	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.0181	<0.0005	0.181	<0.005	-	-	-
Free Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Phenol by HPLC (W)	<0.002	<0.002	<0.02	<0.02	-	-	-
Cresols by HPLC (W)	<0.006	<0.006	<0.06	<0.06	-	-	-
Xylenols by HPLC (W)	<0.008	<0.008	<0.08	<0.08	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Total Monohydric Phenols (W)	<0.016	<0.016	<0.16	<0.16	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.00702	<0.0003	0.0702	<0.003	-	-	-
Lead	0.00239	<0.0002	0.0239	<0.002	-	-	-
Manganese	0.0467	<0.003	0.467	<0.03	-	-	-
Nickel	0.00309	<0.0004	0.0309	<0.004	-	-	-
Selenium	0.00288	<0.001	0.0288	<0.01	-	-	-
Vanadium	0.0211	<0.001	0.211	<0.01	-	-	-
Zinc	0.0313	<0.001	0.313	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.216	<0.019	2.16	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000114	<0.00001	0.000114	<0.0001	-	-	-
Acenaphthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Acenaphthylene by GCMS	0.0000114	<0.000005	0.000114	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000621	<0.000005	0.000621	<0.00005	-	-	-
Anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Phenanthrene by GCMS	0.00003	<0.000005	0.0003	<0.00005	-	-	-
Fluorene by GCMS	0.0000075	<0.000005	0.000075	<0.00005	-	-	-
Chrysene by GCMS	0.0000119	<0.000005	0.000119	<0.00005	-	-	-
Pyrene by GCMS	0.0000488	<0.000005	0.000488	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.0000112	<0.000005	0.000112	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.0000202	<0.000005	0.000202	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.0000131	<0.000005	0.000131	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.0000106	<0.000002	0.000106	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-

Leach Test Information

Date Prepared	06-Sep-2019
pH (pH Units)	8.96
Conductivity (µS/cm)	1,400.00
Temperature (°C)	19.50
Volume Leachant (Litres)	0.823

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.166	**Natural Moisture Content (%)**	85.2
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	54
Particle Size <4mm	>95%		

Case	
SDG	190828-36
Lab Sample Number(s)	20598824
Sampled Date	21-Aug-2019
Customer Sample Ref.	CPB7
Depth (m)	2.70 - 2.70

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
PAH Spec MS - Aqueous (W)							
PAH 16 EPA Total by GCMS	0.000238	<0.000082	0.00238	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	06-Sep-2019
pH (pH Units)	8.96
Conductivity (µS/cm)	1,400.00
Temperature (°C)	19.50
Volume Leachant (Litres)	0.823

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.132	**Natural Moisture Content (%)**	47.1
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	68
Particle Size <4mm	>95%		

Case	
SDG	190828-36
Lab Sample Number(s)	20598832
Sampled Date	21-Aug-2019
Customer Sample Ref.	CPB7
Depth (m)	4.70 - 4.70

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Ammoniacal Nitrogen as N	15.8	<0.01	158	<0.1	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.0242	<0.0005	0.242	<0.005	-	-	-
Free Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Phenol by HPLC (W)	<0.002	<0.002	<0.02	<0.02	-	-	-
Cresols by HPLC (W)	<0.006	<0.006	<0.06	<0.06	-	-	-
Xylenols by HPLC (W)	<0.008	<0.008	<0.08	<0.08	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Total Monohydric Phenols (W)	<0.016	<0.016	<0.16	<0.16	-	-	-
Chromium	0.0023	<0.001	0.023	<0.01	-	-	-
Copper	0.0087	<0.0003	0.087	<0.003	-	-	-
Lead	0.000949	<0.0002	0.00949	<0.002	-	-	-
Manganese	0.0425	<0.003	0.425	<0.03	-	-	-
Nickel	0.0115	<0.0004	0.115	<0.004	-	-	-
Selenium	0.002	<0.001	0.02	<0.01	-	-	-
Vanadium	0.0821	<0.001	0.821	<0.01	-	-	-
Zinc	0.0307	<0.001	0.307	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.0564	<0.019	0.564	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Acenaphthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000233	<0.000005	0.000233	<0.00005	-	-	-
Anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Phenanthrene by GCMS	0.000014	<0.000005	0.00014	<0.00005	-	-	-
Fluorene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.0000164	<0.000005	0.000164	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.00000838	<0.000005	0.0000838	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.00000321	<0.000002	0.0000321	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-

Leach Test Information

Date Prepared	06-Sep-2019
pH (pH Units)	8.27
Conductivity (µS/cm)	573.00
Temperature (°C)	19.50
Volume Leachant (Litres)	0.858

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.132	**Natural Moisture Content (%)**	47.1
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	68
Particle Size <4mm	>95%		

Case	
SDG	190828-36
Lab Sample Number(s)	20598832
Sampled Date	21-Aug-2019
Customer Sample Ref.	CPB7
Depth (m)	4.70 - 4.70

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
PAH Spec MS - Aqueous (W)							
PAH 16 EPA Total by GCMS	<0.000082	<0.000082	<0.00082	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	06-Sep-2019
pH (pH Units)	8.27
Conductivity (µS/cm)	573.00
Temperature (°C)	19.50
Volume Leachant (Litres)	0.858

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.231	**Natural Moisture Content (%)**	156
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	39
Particle Size <4mm	>95%		

Case	
SDG	190828-36
Lab Sample Number(s)	20598839
Sampled Date	21-Aug-2019
Customer Sample Ref.	CPB7
Depth (m)	6.60 - 6.60

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Ammoniacal Nitrogen as N	21.5	<0.01	215	<0.1	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.0325	<0.003	0.325	<0.03	-	-	-
Free Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Phenol by HPLC (W)	<0.002	<0.002	<0.02	<0.02	-	-	-
Cresols by HPLC (W)	<0.006	<0.006	<0.06	<0.06	-	-	-
Xylenols by HPLC (W)	0.02	<0.008	0.2	<0.08	-	-	-
Cadmium	<0.00048	<0.00048	<0.0048	<0.0048	-	-	-
Total Monohydric Phenols (W)	0.02	<0.016	0.2	<0.16	-	-	-
Chromium	<0.006	<0.006	<0.06	<0.06	-	-	-
Copper	0.00566	<0.0018	0.0566	<0.018	-	-	-
Lead	0.00177	<0.0012	0.0177	<0.012	-	-	-
Manganese	0.0992	<0.018	0.992	<0.18	-	-	-
Nickel	0.00254	<0.0004	0.0254	<0.004	-	-	-
Selenium	<0.006	<0.006	<0.06	<0.06	-	-	-
Vanadium	<0.006	<0.006	<0.06	<0.06	-	-	-
Zinc	0.0146	<0.006	0.146	<0.06	-	-	-
Iron (Dis.Filt) mg/l	0.107	<0.019	1.07	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000107	<0.00001	0.000107	<0.0001	-	-	-
Acenaphthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Acenaphthylene by GCMS	0.00000796	<0.000005	0.0000796	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000429	<0.000005	0.000429	<0.00005	-	-	-
Anthracene by GCMS	0.00000769	<0.000005	0.0000769	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000241	<0.000005	0.000241	<0.00005	-	-	-
Fluorene by GCMS	0.00000877	<0.000005	0.0000877	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.0000352	<0.000005	0.000352	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.00000798	<0.000005	0.0000798	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-

Leach Test Information

Date Prepared	05-Sep-2019
pH (pH Units)	8.36
Conductivity (µS/cm)	1,670.00
Temperature (°C)	19.60
Volume Leachant (Litres)	0.760

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.231	**Natural Moisture Content (%)**	156
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	39
Particle Size <4mm	>95%		

Case	
SDG	190828-36
Lab Sample Number(s)	20598839
Sampled Date	21-Aug-2019
Customer Sample Ref.	CPB7
Depth (m)	6.60 - 6.60

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
PAH Spec MS - Aqueous (W)							
PAH 16 EPA Total by GCMS	0.000145	<0.000082	0.00145	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	0.011	<0.01	0.11	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	0.013	<0.01	0.13	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	0.009	<0.008	0.09	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	05-Sep-2019
pH (pH Units)	8.36
Conductivity (µS/cm)	1,670.00
Temperature (°C)	19.60
Volume Leachant (Litres)	0.760

Mcerts Certification does not apply to leachates

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Validated

CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.136	**Natural Moisture Content (%)**	51.5
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	66
Particle Size <4mm	>95%		

Case	
SDG	190828-36
Lab Sample Number(s)	20598847
Sampled Date	19-Aug-2019
Customer Sample Ref.	CPB9
Depth (m)	3.50 - 3.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Ammoniacal Nitrogen as N	3.93	<0.01	39.3	<0.1	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00178	<0.0005	0.0178	<0.005	-	-	-
Free Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Phenol by HPLC (W)	<0.002	<0.002	<0.02	<0.02	-	-	-
Cresols by HPLC (W)	<0.006	<0.006	<0.06	<0.06	-	-	-
Xylenols by HPLC (W)	<0.008	<0.008	<0.08	<0.08	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Total Monohydric Phenols (W)	<0.016	<0.016	<0.16	<0.16	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.00808	<0.0003	0.0808	<0.003	-	-	-
Lead	0.00094	<0.0002	0.0094	<0.002	-	-	-
Manganese	0.0331	<0.003	0.331	<0.03	-	-	-
Nickel	0.00146	<0.0004	0.0146	<0.004	-	-	-
Selenium	0.00266	<0.001	0.0266	<0.01	-	-	-
Vanadium	0.00438	<0.001	0.0438	<0.01	-	-	-
Zinc	0.0548	<0.001	0.548	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.135	<0.019	1.35	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Acenaphthene by GCMS	0.0000329	<0.000025	0.000329	<0.00025	-	-	-
Acenaphthylene by GCMS	0.0000329	<0.000025	0.000329	<0.00025	-	-	-
Fluoranthene by GCMS	0.000748	<0.000025	0.00748	<0.00025	-	-	-
Anthracene by GCMS	<0.000025	<0.000025	<0.00025	<0.00025	-	-	-
Phenanthrene by GCMS	<0.000025	<0.000025	<0.00025	<0.00025	-	-	-
Fluorene by GCMS	<0.000025	<0.000025	<0.00025	<0.00025	-	-	-
Chrysene by GCMS	0.0000837	<0.000025	0.000837	<0.00025	-	-	-
Pyrene by GCMS	0.000444	<0.000025	0.00444	<0.00025	-	-	-
Benz(a)anthracene by GCMS	<0.000025	<0.000025	<0.00025	<0.00025	-	-	-
Benzo(b)fluoranthene by GCMS	0.000182	<0.000025	0.00182	<0.00025	-	-	-
Benzo(k)fluoranthene by GCMS	0.0000861	<0.000025	0.000861	<0.00025	-	-	-
Benzo(a)pyrene by GCMS	0.000118	<0.00001	0.00118	<0.0001	-	-	-
Dibenzo(ah)anthracene by GCMS	0.0000263	<0.000025	0.000263	<0.00025	-	-	-
Benzo(ghi)perylene by GCMS	<0.000025	<0.000025	<0.00025	<0.00025	-	-	-
Indeno(123cd)pyrene by GCMS	0.0000827	<0.000025	0.000827	<0.00025	-	-	-

Leach Test Information

Date Prepared	06-Sep-2019
pH (pH Units)	7.97
Conductivity (µS/cm)	473.00
Temperature (°C)	22.10
Volume Leachant (Litres)	0.854

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.136	**Natural Moisture Content (%)**	51.5
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	66
Particle Size <4mm	>95%		

Case	
SDG	190828-36
Lab Sample Number(s)	20598847
Sampled Date	19-Aug-2019
Customer Sample Ref.	CPB9
Depth (m)	3.50 - 3.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
PAH Spec MS - Aqueous (W)							
PAH 16 EPA Total by GCMS	0.00184	<0.00041	0.0184	<0.0041	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	06-Sep-2019
pH (pH Units)	7.97
Conductivity (µS/cm)	473.00
Temperature (°C)	22.10
Volume Leachant (Litres)	0.854

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.243	**Natural Moisture Content (%)**	170
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	37
Particle Size <4mm	>95%		

Case	
SDG	190828-36
Lab Sample Number(s)	20598859
Sampled Date	19-Aug-2019
Customer Sample Ref.	CPB9
Depth (m)	6.50 - 6.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Ammoniacal Nitrogen as N	3.31	<0.01	33.1	<0.1	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.0034	<0.0005	0.034	<0.005	-	-	-
Free Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Phenol by HPLC (W)	<0.002	<0.002	<0.02	<0.02	-	-	-
Cresols by HPLC (W)	<0.006	<0.006	<0.06	<0.06	-	-	-
Xylenols by HPLC (W)	<0.008	<0.008	<0.08	<0.08	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Total Monohydric Phenols (W)	<0.016	<0.016	<0.16	<0.16	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	<0.0003	<0.0003	<0.003	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	0.127	<0.003	1.27	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	<0.001	<0.001	<0.01	<0.01	-	-	-
Vanadium	<0.001	<0.001	<0.01	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000611	<0.00001	0.000611	<0.0001	-	-	-
Acenaphthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.000278	<0.000005	0.00278	<0.00005	-	-	-
Anthracene by GCMS	0.0000452	<0.000005	0.000452	<0.00005	-	-	-
Phenanthrene by GCMS	0.000402	<0.000005	0.00402	<0.00005	-	-	-
Fluorene by GCMS	0.0000354	<0.000005	0.000354	<0.00005	-	-	-
Chrysene by GCMS	0.0000695	<0.000005	0.000695	<0.00005	-	-	-
Pyrene by GCMS	0.000194	<0.000005	0.00194	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.0000764	<0.000005	0.000764	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.000101	<0.000005	0.00101	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.0000756	<0.000005	0.000756	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.0000689	<0.000002	0.000689	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-

Leach Test Information

Date Prepared	05-Sep-2019
pH (pH Units)	7.33
Conductivity (µS/cm)	490.00
Temperature (°C)	19.40
Volume Leachant (Litres)	0.747

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.243	**Natural Moisture Content (%)**	170
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	37
Particle Size <4mm	>95%		

Case	
SDG	190828-36
Lab Sample Number(s)	20598859
Sampled Date	19-Aug-2019
Customer Sample Ref.	CPB9
Depth (m)	6.50 - 6.50

Eluate Analysis	**C_2** Concⁿ in 10:1 eluate (mg/l)		**A_2** 10:1 concⁿ leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
PAH Spec MS - Aqueous (W)							
PAH 16 EPA Total by GCMS	0.00141	<0.000082	0.0141	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	0.185	<0.01	1.85	<0.1	-	-	-
Total Aromatics >EC12-EC35	0.185	<0.01	1.85	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	0.185	<0.01	1.85	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	05-Sep-2019
pH (pH Units)	7.33
Conductivity (µS/cm)	490.00
Temperature (°C)	19.40
Volume Leachant (Litres)	0.747

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.134	**Natural Moisture Content (%)**	49.3
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	67
Particle Size <4mm	>95%		

Case	
SDG	190828-36
Lab Sample Number(s)	20598882
Sampled Date	19-Aug-2019
Customer Sample Ref.	CPB9
Depth (m)	7.60 - 7.60

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Ammoniacal Nitrogen as N	2.38	<0.01	23.8	<0.1	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00192	<0.0005	0.0192	<0.005	-	-	-
Free Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Phenol by HPLC (W)	<0.002	<0.002	<0.02	<0.02	-	-	-
Cresols by HPLC (W)	<0.006	<0.006	<0.06	<0.06	-	-	-
Xylenols by HPLC (W)	<0.008	<0.008	<0.08	<0.08	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Total Monohydric Phenols (W)	<0.016	<0.016	<0.16	<0.16	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.0014	<0.0003	0.014	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	0.0533	<0.003	0.533	<0.03	-	-	-
Nickel	0.00111	<0.0004	0.0111	<0.004	-	-	-
Selenium	0.00116	<0.001	0.0116	<0.01	-	-	-
Vanadium	0.00431	<0.001	0.0431	<0.01	-	-	-
Zinc	0.00108	<0.001	0.0108	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Acenaphthene by GCMS	0.0000337	<0.000005	0.000337	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.000214	<0.000005	0.00214	<0.00005	-	-	-
Anthracene by GCMS	0.0000158	<0.000005	0.000158	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000101	<0.000005	0.000101	<0.00005	-	-	-
Fluorene by GCMS	0.00000888	<0.000005	0.0000888	<0.00005	-	-	-
Chrysene by GCMS	0.0000174	<0.000005	0.000174	<0.00005	-	-	-
Pyrene by GCMS	0.000114	<0.000005	0.00114	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.0000177	<0.000005	0.000177	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.0000204	<0.000005	0.000204	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.00000818	<0.000005	0.0000818	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.0000124	<0.000002	0.000124	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	0.00000647	<0.000005	0.0000647	<0.00005	-	-	-

Leach Test Information

Date Prepared	07-Sep-2019
pH (pH Units)	7.75
Conductivity (µS/cm)	354.00
Temperature (°C)	22.10
Volume Leachant (Litres)	0.856

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.134	**Natural Moisture Content (%)**	49.3
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	67
Particle Size <4mm	>95%		

Case	
SDG	190828-36
Lab Sample Number(s)	20598882
Sampled Date	19-Aug-2019
Customer Sample Ref.	CPB9
Depth (m)	7.60 - 7.60

Eluate Analysis	**C_2** Concⁿ in 10:1 eluate (mg/l)		**A_2** 10:1 concⁿ leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
PAH Spec MS - Aqueous (W)							
PAH 16 EPA Total by GCMS	0.000479	<0.000082	0.00479	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	07-Sep-2019
pH (pH Units)	7.75
Conductivity (µS/cm)	354.00
Temperature (°C)	22.10
Volume Leachant (Litres)	0.856

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.103	**Natural Moisture Content (%)**	14.9
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	87
Particle Size <4mm	>95%		

Case	
SDG	190828-36
Lab Sample Number(s)	20598896
Sampled Date	19-Aug-2019
Customer Sample Ref.	CPB9
Depth (m)	8.60 - 8.60

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Ammoniacal Nitrogen as N	0.332	<0.01	3.32	<0.1	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00401	<0.0005	0.0401	<0.005	-	-	-
Free Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Phenol by HPLC (W)	<0.002	<0.002	<0.02	<0.02	-	-	-
Cresols by HPLC (W)	<0.006	<0.006	<0.06	<0.06	-	-	-
Xylenols by HPLC (W)	<0.008	<0.008	<0.08	<0.08	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Total Monohydric Phenols (W)	<0.016	<0.016	<0.16	<0.16	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	<0.0003	<0.0003	<0.003	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	0.00632	<0.003	0.0632	<0.03	-	-	-
Nickel	0.000706	<0.0004	0.00706	<0.004	-	-	-
Selenium	<0.001	<0.001	<0.01	<0.01	-	-	-
Vanadium	0.00851	<0.001	0.0851	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Acenaphthene by GCMS	0.0000453	<0.000005	0.000453	<0.00005	-	-	-
Acenaphthylene by GCMS	0.0000147	<0.000005	0.000147	<0.00005	-	-	-
Fluoranthene by GCMS	0.000351	<0.000005	0.00351	<0.00005	-	-	-
Anthracene by GCMS	0.0000415	<0.000005	0.000415	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000119	<0.000005	0.000119	<0.00005	-	-	-
Fluorene by GCMS	0.0000435	<0.000005	0.000435	<0.00005	-	-	-
Chrysene by GCMS	0.0000196	<0.000005	0.000196	<0.00005	-	-	-
Pyrene by GCMS	0.000347	<0.000005	0.00347	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.000017	<0.000005	0.00017	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.00000749	<0.000005	0.0000749	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-

Leach Test Information

Date Prepared	05-Sep-2019
pH (pH Units)	8.26
Conductivity (µS/cm)	135.00
Temperature (°C)	19.10
Volume Leachant (Litres)	0.887

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.103	**Natural Moisture Content (%)**	14.9
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	87
Particle Size <4mm	>95%		

Case	
SDG	190828-36
Lab Sample Number(s)	20598896
Sampled Date	19-Aug-2019
Customer Sample Ref.	CPB9
Depth (m)	8.60 - 8.60

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
PAH Spec MS - Aqueous (W)							
PAH 16 EPA Total by GCMS	0.0009	<0.000082	0.009	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	05-Sep-2019
pH (pH Units)	8.26
Conductivity (µS/cm)	135.00
Temperature (°C)	19.10
Volume Leachant (Litres)	0.887

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.195	**Natural Moisture Content (%)**	117
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	46
Particle Size <4mm	>95%		

Case	
SDG	190828-36
Lab Sample Number(s)	20598911
Sampled Date	20-Aug-2019
Customer Sample Ref.	CPBR3
Depth (m)	3.40 - 3.40

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Ammoniacal Nitrogen as N	2.11	<0.01	21.1	<0.1	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00883	<0.0005	0.0883	<0.005	-	-	-
Free Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Phenol by HPLC (W)	<0.002	<0.002	<0.02	<0.02	-	-	-
Cresols by HPLC (W)	<0.006	<0.006	<0.06	<0.06	-	-	-
Xylenols by HPLC (W)	<0.008	<0.008	<0.08	<0.08	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Total Monohydric Phenols (W)	<0.016	<0.016	<0.16	<0.16	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.00282	<0.0003	0.0282	<0.003	-	-	-
Lead	0.000359	<0.0002	0.00359	<0.002	-	-	-
Manganese	0.00507	<0.003	0.0507	<0.03	-	-	-
Nickel	0.0023	<0.0004	0.023	<0.004	-	-	-
Selenium	0.00778	<0.001	0.0778	<0.01	-	-	-
Vanadium	0.341	<0.001	3.41	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.218	<0.019	2.18	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Acenaphthene by GCMS	0.0000721	<0.000005	0.000721	<0.00005	-	-	-
Acenaphthylene by GCMS	0.000022	<0.000005	0.00022	<0.00005	-	-	-
Fluoranthene by GCMS	0.000466	<0.000005	0.00466	<0.00005	-	-	-
Anthracene by GCMS	0.0000871	<0.000005	0.000871	<0.00005	-	-	-
Phenanthrene by GCMS	0.000763	<0.000005	0.00763	<0.00005	-	-	-
Fluorene by GCMS	0.000262	<0.000005	0.00262	<0.00005	-	-	-
Chrysene by GCMS	0.0000484	<0.000005	0.000484	<0.00005	-	-	-
Pyrene by GCMS	0.000297	<0.000005	0.00297	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.0000447	<0.000005	0.000447	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.00004	<0.000005	0.0004	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.0000258	<0.000005	0.000258	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.0000262	<0.000002	0.000262	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	0.0000355	<0.000005	0.000355	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	0.000014	<0.000005	0.00014	<0.00005	-	-	-

Leach Test Information

Date Prepared	05-Sep-2019
pH (pH Units)	10.03
Conductivity (µS/cm)	374.00
Temperature (°C)	19.60
Volume Leachant (Litres)	0.795

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.195	**Natural Moisture Content (%)**	117
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	46
Particle Size <4mm	>95%		

Case	
SDG	190828-36
Lab Sample Number(s)	20598911
Sampled Date	20-Aug-2019
Customer Sample Ref.	CPBR3
Depth (m)	3.40 - 3.40

Eluate Analysis	**C_2** Concⁿ in 10:1 eluate (mg/l)		**A_2** 10:1 concⁿ leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
PAH Spec MS - Aqueous (W)							
PAH 16 EPA Total by GCMS	0.0022	<0.000082	0.022	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	0.029	<0.01	0.29	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	05-Sep-2019
pH (pH Units)	10.03
Conductivity (µS/cm)	374.00
Temperature (°C)	19.60
Volume Leachant (Litres)	0.795

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.290	**Natural Moisture Content (%)**	223
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	31
Particle Size <4mm	>95%		

Case	
SDG	190828-36
Lab Sample Number(s)	20598922
Sampled Date	20-Aug-2019
Customer Sample Ref.	CPBR3
Depth (m)	4.80 - 4.80

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Ammoniacal Nitrogen as N	4.17	<0.01	41.7	<0.1	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.0226	<0.0005	0.226	<0.005	-	-	-
Free Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Phenol by HPLC (W)	<0.002	<0.002	<0.02	<0.02	-	-	-
Cresols by HPLC (W)	<0.006	<0.006	<0.06	<0.06	-	-	-
Xylenols by HPLC (W)	<0.008	<0.008	<0.08	<0.08	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Total Monohydric Phenols (W)	<0.016	<0.016	<0.16	<0.16	-	-	-
Chromium	0.0018	<0.001	0.018	<0.01	-	-	-
Copper	0.00116	<0.0003	0.0116	<0.003	-	-	-
Lead	0.00112	<0.0002	0.0112	<0.002	-	-	-
Manganese	0.105	<0.003	1.05	<0.03	-	-	-
Nickel	0.00257	<0.0004	0.0257	<0.004	-	-	-
Selenium	0.00345	<0.001	0.0345	<0.01	-	-	-
Vanadium	0.0483	<0.001	0.483	<0.01	-	-	-
Zinc	0.00624	<0.001	0.0624	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.4	<0.019	4	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	<0.00002	<0.00002	<0.0002	<0.0002	-	-	-
Acenaphthene by GCMS	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Acenaphthylene by GCMS	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Fluoranthene by GCMS	0.0000646	<0.00001	0.000646	<0.0001	-	-	-
Anthracene by GCMS	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Phenanthrene by GCMS	0.0000301	<0.00001	0.000301	<0.0001	-	-	-
Fluorene by GCMS	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Chrysene by GCMS	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Pyrene by GCMS	0.0000353	<0.00001	0.000353	<0.0001	-	-	-
Benz(a)anthracene by GCMS	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Benzo(b)fluoranthene by GCMS	0.0000136	<0.00001	0.000136	<0.0001	-	-	-
Benzo(k)fluoranthene by GCMS	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Benzo(a)pyrene by GCMS	0.00000663	<0.000004	0.0000663	<0.00004	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Benzo(ghi)perylene by GCMS	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Indeno(123cd)pyrene by GCMS	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-

Leach Test Information

Date Prepared	06-Sep-2019
pH (pH Units)	8.09
Conductivity (µS/cm)	677.00
Temperature (°C)	22.00
Volume Leachant (Litres)	0.699

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.290	**Natural Moisture Content (%)**	223
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	31
Particle Size <4mm	>95%		

Case	
SDG	190828-36
Lab Sample Number(s)	20598922
Sampled Date	20-Aug-2019
Customer Sample Ref.	CPBR3
Depth (m)	4.80 - 4.80

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
PAH Spec MS - Aqueous (W)							
PAH 16 EPA Total by GCMS	<0.000164	<0.000164	<0.00164	<0.00164	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	06-Sep-2019
pH (pH Units)	8.09
Conductivity (µS/cm)	677.00
Temperature (°C)	22.00
Volume Leachant (Litres)	0.699

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.209	**Natural Moisture Content (%)**	133
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	43
Particle Size <4mm	>95%		

Case	
SDG	190828-36
Lab Sample Number(s)	20598930
Sampled Date	20-Aug-2019
Customer Sample Ref.	CPBR3
Depth (m)	7.40 - 7.40

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Ammoniacal Nitrogen as N	3.18	<0.01	31.8	<0.1	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.003	<0.0005	0.03	<0.005	-	-	-
Free Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Phenol by HPLC (W)	<0.002	<0.002	<0.02	<0.02	-	-	-
Cresols by HPLC (W)	<0.006	<0.006	<0.06	<0.06	-	-	-
Xylenols by HPLC (W)	<0.008	<0.008	<0.08	<0.08	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Total Monohydric Phenols (W)	<0.016	<0.016	<0.16	<0.16	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.00145	<0.0003	0.0145	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	0.29	<0.003	2.9	<0.03	-	-	-
Nickel	0.00102	<0.0004	0.0102	<0.004	-	-	-
Selenium	0.00171	<0.001	0.0171	<0.01	-	-	-
Vanadium	0.00607	<0.001	0.0607	<0.01	-	-	-
Zinc	0.00224	<0.001	0.0224	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000153	<0.00001	0.000153	<0.0001	-	-	-
Acenaphthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Acenaphthylene by GCMS	0.00000828	<0.000005	0.0000828	<0.00005	-	-	-
Fluoranthene by GCMS	0.000149	<0.000005	0.00149	<0.00005	-	-	-
Anthracene by GCMS	0.0000156	<0.000005	0.000156	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000798	<0.000005	0.000798	<0.00005	-	-	-
Fluorene by GCMS	0.0000166	<0.000005	0.000166	<0.00005	-	-	-
Chrysene by GCMS	0.000012	<0.000005	0.00012	<0.00005	-	-	-
Pyrene by GCMS	0.0000954	<0.000005	0.000954	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.0000128	<0.000005	0.000128	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.0000198	<0.000005	0.000198	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.00000839	<0.000005	0.0000839	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.0000106	<0.000002	0.000106	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	0.00000997	<0.000005	0.0000997	<0.00005	-	-	-

Leach Test Information

Date Prepared	06-Sep-2019
pH (pH Units)	8.19
Conductivity (µS/cm)	644.00
Temperature (°C)	21.80
Volume Leachant (Litres)	0.780

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.209	**Natural Moisture Content (%)**	133
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	43
Particle Size <4mm	>95%		

Case	
SDG	190828-36
Lab Sample Number(s)	20598930
Sampled Date	20-Aug-2019
Customer Sample Ref.	CPBR3
Depth (m)	7.40 - 7.40

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
PAH Spec MS - Aqueous (W)							
PAH 16 EPA Total by GCMS	0.000453	<0.000082	0.00453	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	06-Sep-2019
pH (pH Units)	8.19
Conductivity (µS/cm)	644.00
Temperature (°C)	21.80
Volume Leachant (Litres)	0.780

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.250	**Natural Moisture Content (%)**	178
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	36
Particle Size <4mm	>95%		

Case	
SDG	190828-36
Lab Sample Number(s)	20598939
Sampled Date	21-Aug-2019
Customer Sample Ref.	CPBR9
Depth (m)	3.10 - 3.10

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Ammoniacal Nitrogen as N	4.91	<0.01	49.1	<0.1	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00146	<0.0005	0.0146	<0.005	-	-	-
Free Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Phenol by HPLC (W)	<0.002	<0.002	<0.02	<0.02	-	-	-
Cresols by HPLC (W)	<0.006	<0.006	<0.06	<0.06	-	-	-
Xylenols by HPLC (W)	<0.008	<0.008	<0.08	<0.08	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Total Monohydric Phenols (W)	<0.016	<0.016	<0.16	<0.16	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	<0.0003	<0.0003	<0.003	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	0.148	<0.003	1.48	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	<0.001	<0.001	<0.01	<0.01	-	-	-
Vanadium	0.00233	<0.001	0.0233	<0.01	-	-	-
Zinc	0.0023	<0.001	0.023	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Acenaphthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000133	<0.000005	0.000133	<0.00005	-	-	-
Anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Phenanthrene by GCMS	0.00000879	<0.000005	0.0000879	<0.00005	-	-	-
Fluorene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.00000911	<0.000005	0.0000911	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-

Leach Test Information

Date Prepared	05-Sep-2019
pH (pH Units)	8.13
Conductivity (µS/cm)	717.00
Temperature (°C)	19.20
Volume Leachant (Litres)	0.740

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.250	**Natural Moisture Content (%)**	178
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	36
Particle Size <4mm	>95%		

Case	
SDG	190828-36
Lab Sample Number(s)	20598939
Sampled Date	21-Aug-2019
Customer Sample Ref.	CPBR9
Depth (m)	3.10 - 3.10

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
PAH Spec MS - Aqueous (W)							
PAH 16 EPA Total by GCMS	<0.000082	<0.000082	<0.00082	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	05-Sep-2019
pH (pH Units)	8.13
Conductivity (µS/cm)	717.00
Temperature (°C)	19.20
Volume Leachant (Litres)	0.740

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.143	**Natural Moisture Content (%)**	58.7
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	63
Particle Size <4mm	>95%		

Case	
SDG	190828-36
Lab Sample Number(s)	20598946
Sampled Date	21-Aug-2019
Customer Sample Ref.	CPBR9
Depth (m)	4.20 - 4.20

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Ammoniacal Nitrogen as N	2.54	<0.01	25.4	<0.1	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00475	<0.0005	0.0475	<0.005	-	-	-
Free Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Phenol by HPLC (W)	<0.002	<0.002	<0.02	<0.02	-	-	-
Cresols by HPLC (W)	<0.006	<0.006	<0.06	<0.06	-	-	-
Xylenols by HPLC (W)	<0.008	<0.008	<0.08	<0.08	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Total Monohydric Phenols (W)	<0.016	<0.016	<0.16	<0.16	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	<0.0003	<0.0003	<0.003	<0.003	-	-	-
Lead	0.000246	<0.0002	0.00246	<0.002	-	-	-
Manganese	0.0631	<0.003	0.631	<0.03	-	-	-
Nickel	0.000702	<0.0004	0.00702	<0.004	-	-	-
Selenium	<0.001	<0.001	<0.01	<0.01	-	-	-
Vanadium	0.0235	<0.001	0.235	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000201	<0.00001	0.000201	<0.0001	-	-	-
Acenaphthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000147	<0.000005	0.000147	<0.00005	-	-	-
Anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000133	<0.000005	0.000133	<0.00005	-	-	-
Fluorene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.0000111	<0.000005	0.000111	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-

Leach Test Information

Date Prepared	05-Sep-2019
pH (pH Units)	7.83
Conductivity (µS/cm)	279.00
Temperature (°C)	19.70
Volume Leachant (Litres)	0.847

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.143	**Natural Moisture Content (%)**	58.7
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	63
Particle Size <4mm	>95%		

Case	
SDG	190828-36
Lab Sample Number(s)	20598946
Sampled Date	21-Aug-2019
Customer Sample Ref.	CPBR9
Depth (m)	4.20 - 4.20

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
PAH Spec MS - Aqueous (W)							
PAH 16 EPA Total by GCMS	<0.000082	<0.000082	<0.00082	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	05-Sep-2019
pH (pH Units)	7.83
Conductivity (µS/cm)	279.00
Temperature (°C)	19.70
Volume Leachant (Litres)	0.847

Mcerts Certification does not apply to leachates

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Validated

CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.117	**Natural Moisture Content (%)**	29.9
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	77
Particle Size <4mm	>95%		

Case	
SDG	190828-36
Lab Sample Number(s)	20598956
Sampled Date	21-Aug-2019
Customer Sample Ref.	CPBR9
Depth (m)	8.80 - 8.80

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Ammoniacal Nitrogen as N	0.679	<0.01	6.79	<0.1	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00476	<0.0005	0.0476	<0.005	-	-	-
Free Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Phenol by HPLC (W)	<0.002	<0.002	<0.02	<0.02	-	-	-
Cresols by HPLC (W)	<0.006	<0.006	<0.06	<0.06	-	-	-
Xylenols by HPLC (W)	<0.008	<0.008	<0.08	<0.08	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Total Monohydric Phenols (W)	<0.016	<0.016	<0.16	<0.16	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	<0.0003	<0.0003	<0.003	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	0.0386	<0.003	0.386	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	<0.001	<0.001	<0.01	<0.01	-	-	-
Vanadium	0.0124	<0.001	0.124	<0.01	-	-	-
Zinc	0.00257	<0.001	0.0257	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000112	<0.00001	0.000112	<0.0001	-	-	-
Acenaphthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.000024	<0.000005	0.00024	<0.00005	-	-	-
Anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000231	<0.000005	0.000231	<0.00005	-	-	-
Fluorene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.000021	<0.000005	0.00021	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-

Leach Test Information

Date Prepared	05-Sep-2019
pH (pH Units)	7.71
Conductivity (µS/cm)	193.00
Temperature (°C)	19.60
Volume Leachant (Litres)	0.873

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.117	**Natural Moisture Content (%)**	29.9
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	77
Particle Size <4mm	>95%		

Case	
SDG	190828-36
Lab Sample Number(s)	20598956
Sampled Date	21-Aug-2019
Customer Sample Ref.	CPBR9
Depth (m)	8.80 - 8.80

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
PAH Spec MS - Aqueous (W)							
PAH 16 EPA Total by GCMS	<0.000082	<0.000082	<0.00082	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	05-Sep-2019
pH (pH Units)	7.71
Conductivity (µS/cm)	193.00
Temperature (°C)	19.60
Volume Leachant (Litres)	0.873

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

Notification of NDPs (No determination possible)

Date Received : 28/08/2019 09:16:25

Sample No	Customer Sample Ref.	Depth (m)	Test	Comment
20598417	WS01	1.80 - 1.80	Asbestos ID in Solid Samples	Sample unsuitable for analysis
20598417	WS01	1.80 - 1.80	Asbestos Quantification - Full	Sample unsuitable for analysis
20598417	WS01	1.80 - 1.80	Total Sulphur	Unsuitable for Analysis
20598417	WS01	1.80 - 1.80	Total Sulphate	Unsuitable for Analysis
20598417	WS01	1.80 - 1.80	TPH CWG GC (S)	Sample unsuitable for analysis
20598417	WS01	1.80 - 1.80	Metals in solid samples by OES	Unsuitable for Analysis
20598417	WS01	1.80 - 1.80	Total Organic Carbon	Unsuitable for Analysis
20598417	WS01	1.80 - 1.80	Anions by Kone (soil)	Unsuitable for Analysis
20598847	CPB9	3.50 - 3.50	Anions by Kone (soil)	Sample cannot be filtered
20598859	CPB9	6.50 - 6.50	Anions by Kone (soil)	Sample cannot be filtered
20598417	WS01	1.80 - 1.80	VOC MS (S)	Sample unsuitable for analysis
20598417	WS01	1.80 - 1.80	GRO by GC-FID (S)	Sample unsuitable for analysis

CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

Table of Results - Appendix

Method No	Reference	Description
PM024	Modified BS 1377	Soil preparation including homogenisation, moisture screens of soils for Asbestos Containing Material
PM115		Leaching Procedure for CEN One Stage Leach Test 2:1 & 10:1 1 Step
TM024	Method 4500A & B, AWWA/APHA, 20th Ed., 1999	Determination of Exchangeable Ammonium and Ammoniacal Nitrogen as N by titration on solids
TM048	HSG 248, Asbestos: The analysts' guide for sampling, analysis and clearance procedures	Identification of Asbestos in Bulk Material
TM062 (S)	National Grid Property Holdings Methods for the Collection & Analysis of Samples from National Grid Sites version 1 Sec 3.9	Determination of Phenols in Soils by HPLC
TM089	Modified: US EPA Methods 8020 & 602	Determination of Gasoline Range Hydrocarbons (GRO) by Headspace GC-FID (C4-C12)
TM099	BS 2690: Part 7:1968 / BS 6068: Part2.11:1984	Determination of Ammonium in Water Samples using the Kone Analyser
TM116	Modified: US EPA Method 8260, 8120, 8020, 624, 610 & 602	Determination of Volatile Organic Compounds by Headspace / GC-MS
TM132	In - house Method	ELTRA CS800 Operators Guide
TM133	BS 1377: Part 3 1990;BS 6068-2.5	Determination of pH in Soil and Water using the GLpH pH Meter
TM152	Method 3125B, AWWA/APHA, 20th Ed., 1999	Analysis of Aqueous Samples by ICP-MS
TM153	Method 4500A,B,C, I, M AWWA/APHA, 20th Ed., 1999	Determination of Total Cyanide, Free (Easily Liberatable) Cyanide and Thiocyanate using the Skalar SANS+ System Segmented Flow Analyser
TM173	Analysis of Petroleum Hydrocarbons in Environmental Media – Total Petroleum Hydrocarbon Criteria	Determination of Speciated Extractable Petroleum Hydrocarbons in Soils by GC-FID
TM174	Analysis of Petroleum Hydrocarbons in Environmental Media – Total Petroleum Hydrocarbon Criteria	Determination of Speciated Extractable Petroleum Hydrocarbons in Waters by GC-FID
TM178	Modified: US EPA Method 8100	Determination of Polynuclear Aromatic Hydrocarbons (PAH) by GC-MS in Waters
TM181	US EPA Method 6010B	Determination of Routine Metals in Soil by iCap 6500 Duo ICP-OES
TM183	BS EN 23506:2002, (BS 6068-2.74:2002) ISBN 0 580 38924 3	Determination of Trace Level Mercury in Waters and Leachates by PSA Cold Vapour Atomic Fluorescence Spectrometry
TM218	Shaker extraction - EPA method 3546.	The determination of PAH in soil samples by GC-MS
TM221	Inductively Coupled Plasma - Atomic Emission Spectroscopy. An Atlas of Spectral Information: Winge, Fassel, Peterson and Floyd	Determination of Acid extractable Sulphate in Soils by IRIS Emission Spectrometer
TM227	Standard methods for the examination of waters and wastewaters 20th Edition, AWWA/APHA Method 4500.	Determination of Total Cyanide, Free (Easily Liberatable) Cyanide and Thiocyanate
TM243		Mixed Anions In Soils By Kone
TM245	By GC-FID	Determination of GRO by Headspace in waters
TM256	The measurement of Electrical Conductivity and the Laboratory determination of pH Value of Natural, Treated and Wastewaters. HMSO, 1978. ISBN 011 751428 4.	Determination of pH in Water and Leachate using the GLpH pH Meter
TM259	by HPLC	Determination of Phenols in Waters and Leachates by HPLC
TM304	HSE Contract research Report no 83/1996	Asbestos Quantification in Soil: Fibres identified by morphology only

NA = not applicable.

Chemical testing (unless subcontracted) performed at ALS Life Sciences Ltd Hawarden (Method codes TM) or ALS Life Sciences Ltd Aberdeen (Method codes S).

CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

Test Completion Dates

Lab Sample No(s)	20598637	20598655	20598666	20598427	20598438	20598446	20598824	20598832	20598839	20598847
Customer Sample Ref.	BHCP105	BHCP105	BHCP105	CPB5	CPB5	CPB5	CPB7	CPB7	CPB7	CPB9
AGS Ref.										
Depth	0.30 - 0.30	0.50 - 0.50	1.00 - 1.00	8.70 - 8.70	7.80 - 7.80	4.00 - 4.00	2.70 - 2.70	4.70 - 4.70	6.60 - 6.60	3.50 - 3.50
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
Ammonium Low	12-Sep-2019	12-Sep-2019	12-Sep-2019	12-Sep-2019	12-Sep-2019	12-Sep-2019	10-Sep-2019	10-Sep-2019	10-Sep-2019	12-Sep-2019
Ammonium Soil by Titration	10-Sep-2019	10-Sep-2019	11-Sep-2019	11-Sep-2019	10-Sep-2019	11-Sep-2019	11-Sep-2019	11-Sep-2019	11-Sep-2019	11-Sep-2019
Anions by Kone (soil)	05-Sep-2019	05-Sep-2019	05-Sep-2019	05-Sep-2019	05-Sep-2019	04-Sep-2019	04-Sep-2019	04-Sep-2019	07-Sep-2019	
Asbestos ID in Solid Samples	30-Aug-2019	30-Aug-2019	30-Aug-2019	04-Sep-2019	03-Sep-2019	04-Sep-2019	03-Sep-2019	05-Sep-2019	03-Sep-2019	04-Sep-2019
CEN 10:1 Leachate (1 Stage)	06-Sep-2019	06-Sep-2019	06-Sep-2019	05-Sep-2019	06-Sep-2019	05-Sep-2019	06-Sep-2019	06-Sep-2019	05-Sep-2019	12-Sep-2019
CEN Readings	09-Sep-2019	09-Sep-2019	09-Sep-2019	08-Sep-2019	09-Sep-2019	09-Sep-2019	09-Sep-2019	09-Sep-2019	09-Sep-2019	11-Sep-2019
Cyanide Comp/Free/Total/Thiocyanate	12-Sep-2019	12-Sep-2019	12-Sep-2019	10-Sep-2019	12-Sep-2019	10-Sep-2019	12-Sep-2019	12-Sep-2019	09-Sep-2019	12-Sep-2019
Dissolved Metals by ICP-MS	13-Sep-2019	13-Sep-2019	13-Sep-2019	14-Sep-2019	13-Sep-2019	14-Sep-2019	13-Sep-2019	13-Sep-2019	17-Sep-2019	13-Sep-2019
EPH CWG (Aliphatic) Aqueous GC (W)	13-Sep-2019	13-Sep-2019	13-Sep-2019	12-Sep-2019	12-Sep-2019	13-Sep-2019	13-Sep-2019	12-Sep-2019	12-Sep-2019	12-Sep-2019
EPH CWG (Aliphatic) GC (S)	03-Sep-2019	04-Sep-2019	04-Sep-2019	04-Sep-2019	03-Sep-2019	04-Sep-2019	04-Sep-2019	03-Sep-2019	03-Sep-2019	11-Sep-2019
EPH CWG (Aromatic) Aqueous GC (W)	13-Sep-2019	13-Sep-2019	13-Sep-2019	12-Sep-2019	12-Sep-2019	13-Sep-2019	13-Sep-2019	12-Sep-2019	12-Sep-2019	12-Sep-2019
EPH CWG (Aromatic) GC (S)	03-Sep-2019	04-Sep-2019	04-Sep-2019	04-Sep-2019	03-Sep-2019	04-Sep-2019	04-Sep-2019	03-Sep-2019	03-Sep-2019	11-Sep-2019
GRO by GC-FID (S)	12-Sep-2019	12-Sep-2019	12-Sep-2019	11-Sep-2019	11-Sep-2019	11-Sep-2019	11-Sep-2019	11-Sep-2019	11-Sep-2019	11-Sep-2019
GRO by GC-FID (W)	10-Sep-2019	10-Sep-2019	10-Sep-2019	09-Sep-2019	10-Sep-2019	09-Sep-2019	10-Sep-2019	10-Sep-2019	10-Sep-2019	11-Sep-2019
Mercury Dissolved	10-Sep-2019	10-Sep-2019	10-Sep-2019	10-Sep-2019	10-Sep-2019	10-Sep-2019	11-Sep-2019	10-Sep-2019	10-Sep-2019	12-Sep-2019
Metals in solid samples by OES	09-Sep-2019	10-Sep-2019	10-Sep-2019	09-Sep-2019	10-Sep-2019	09-Sep-2019	06-Sep-2019	09-Sep-2019	09-Sep-2019	09-Sep-2019
PAH by GCMS	11-Sep-2019	12-Sep-2019	12-Sep-2019	04-Sep-2019	05-Sep-2019	04-Sep-2019	04-Sep-2019	04-Sep-2019	05-Sep-2019	05-Sep-2019
PAH Spec MS - Aqueous (W)	12-Sep-2019	12-Sep-2019	12-Sep-2019	12-Sep-2019	12-Sep-2019	12-Sep-2019	12-Sep-2019	12-Sep-2019	12-Sep-2019	13-Sep-2019
pH	03-Sep-2019	11-Sep-2019	11-Sep-2019	11-Sep-2019	11-Sep-2019	11-Sep-2019	11-Sep-2019	11-Sep-2019	11-Sep-2019	11-Sep-2019
pH Value	12-Sep-2019	12-Sep-2019	10-Sep-2019	12-Sep-2019	10-Sep-2019	11-Sep-2019	12-Sep-2019	10-Sep-2019	11-Sep-2019	12-Sep-2019
Phenols by HPLC (S)	05-Sep-2019	04-Sep-2019	07-Sep-2019	03-Sep-2019	11-Sep-2019	03-Sep-2019	11-Sep-2019	05-Sep-2019	12-Sep-2019	12-Sep-2019
Phenols by HPLC (W)	11-Sep-2019	11-Sep-2019	11-Sep-2019	13-Sep-2019	11-Sep-2019	12-Sep-2019	11-Sep-2019	12-Sep-2019	12-Sep-2019	12-Sep-2019
Sample description	29-Aug-2019	29-Aug-2019	29-Aug-2019	29-Aug-2019	28-Aug-2019	29-Aug-2019	28-Aug-2019	28-Aug-2019	29-Aug-2019	29-Aug-2019
Total Organic Carbon	11-Sep-2019	11-Sep-2019	12-Sep-2019	11-Sep-2019	12-Sep-2019	12-Sep-2019	12-Sep-2019	12-Sep-2019	11-Sep-2019	12-Sep-2019
Total Sulphate	06-Sep-2019	06-Sep-2019	06-Sep-2019	05-Sep-2019	06-Sep-2019	09-Sep-2019	09-Sep-2019	09-Sep-2019	09-Sep-2019	05-Sep-2019
Total Sulphur	05-Sep-2019	04-Sep-2019	04-Sep-2019	05-Sep-2019	11-Sep-2019	06-Sep-2019	04-Sep-2019	05-Sep-2019	05-Sep-2019	04-Sep-2019
TPH CWG (W)	13-Sep-2019	13-Sep-2019	13-Sep-2019	12-Sep-2019	12-Sep-2019	13-Sep-2019	13-Sep-2019	12-Sep-2019	12-Sep-2019	12-Sep-2019
TPH CWG GC (S)	12-Sep-2019	12-Sep-2019	12-Sep-2019	11-Sep-2019	11-Sep-2019	11-Sep-2019	11-Sep-2019	11-Sep-2019	11-Sep-2019	11-Sep-2019
VOC MS (S)	11-Sep-2019	11-Sep-2019	11-Sep-2019	11-Sep-2019	11-Sep-2019	11-Sep-2019	11-Sep-2019	11-Sep-2019	11-Sep-2019	11-Sep-2019

Lab Sample No(s)	20598859	20598882	20598896	20598788	20598798	20598808	20598466	20598492	20598531	20598207
Customer Sample Ref.	CPB9	CPB9	CPB9	CPB11	CPB11	CPB11	CPB13	CPB13	CPB13	CPB18
AGS Ref.										
Depth	6.50 - 6.50	7.60 - 7.60	8.60 - 8.60	3.50 - 3.50	5.50 - 5.50	9.50 - 9.50	4.20 - 4.20	2.20 - 2.20	10.10 - 10.10	0.30 - 0.30
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
Ammonium Low	12-Sep-2019	12-Sep-2019	12-Sep-2019	10-Sep-2019	12-Sep-2019	12-Sep-2019	12-Sep-2019	10-Sep-2019	10-Sep-2019	12-Sep-2019
Ammonium Soil by Titration	11-Sep-2019	10-Sep-2019	11-Sep-2019	11-Sep-2019	10-Sep-2019	11-Sep-2019	10-Sep-2019	10-Sep-2019	11-Sep-2019	10-Sep-2019
Anions by Kone (soil)		04-Sep-2019	05-Sep-2019	07-Sep-2019	07-Sep-2019	07-Sep-2019	04-Sep-2019	04-Sep-2019	05-Sep-2019	03-Sep-2019
Asbestos ID in Solid Samples	04-Sep-2019	04-Sep-2019	30-Aug-2019	03-Sep-2019	02-Sep-2019	03-Sep-2019	03-Sep-2019	04-Sep-2019	30-Aug-2019	03-Sep-2019
CEN 10:1 Leachate (1 Stage)	05-Sep-2019	07-Sep-2019	05-Sep-2019	05-Sep-2019	06-Sep-2019	05-Sep-2019	05-Sep-2019	07-Sep-2019	07-Sep-2019	05-Sep-2019
CEN Readings	09-Sep-2019	11-Sep-2019	08-Sep-2019	09-Sep-2019	09-Sep-2019	09-Sep-2019	09-Sep-2019	09-Sep-2019	09-Sep-2019	09-Sep-2019
Cyanide Comp/Free/Total/Thiocyanate	10-Sep-2019	12-Sep-2019	10-Sep-2019	10-Sep-2019	12-Sep-2019	10-Sep-2019	10-Sep-2019	12-Sep-2019	12-Sep-2019	10-Sep-2019
Dissolved Metals by ICP-MS	14-Sep-2019	13-Sep-2019	17-Sep-2019	14-Sep-2019	13-Sep-2019	17-Sep-2019	17-Sep-2019	13-Sep-2019	13-Sep-2019	14-Sep-2019
EPH CWG (Aliphatic) Aqueous GC (W)	13-Sep-2019	12-Sep-2019	12-Sep-2019	13-Sep-2019	12-Sep-2019	12-Sep-2019	12-Sep-2019	12-Sep-2019	12-Sep-2019	12-Sep-2019
EPH CWG (Aliphatic) GC (S)	11-Sep-2019	03-Sep-2019	04-Sep-2019	03-Sep-2019	03-Sep-2019	04-Sep-2019	04-Sep-2019	04-Sep-2019	04-Sep-2019	03-Sep-2019
EPH CWG (Aromatic) Aqueous GC (W)	13-Sep-2019	12-Sep-2019	12-Sep-2019	13-Sep-2019	12-Sep-2019	12-Sep-2019	12-Sep-2019	12-Sep-2019	12-Sep-2019	12-Sep-2019
EPH CWG (Aromatic) GC (S)	11-Sep-2019	03-Sep-2019	04-Sep-2019	03-Sep-2019	03-Sep-2019	04-Sep-2019	04-Sep-2019	04-Sep-2019	04-Sep-2019	03-Sep-2019
GRO by GC-FID (S)	11-Sep-2019	11-Sep-2019	11-Sep-2019	11-Sep-2019	11-Sep-2019	11-Sep-2019	11-Sep-2019	11-Sep-2019	11-Sep-2019	12-Sep-2019
GRO by GC-FID (W)	10-Sep-2019	11-Sep-2019	09-Sep-2019	10-Sep-2019	11-Sep-2019	10-Sep-2019	10-Sep-2019	10-Sep-2019	10-Sep-2019	10-Sep-2019
Mercury Dissolved	10-Sep-2019	12-Sep-2019	10-Sep-2019	11-Sep-2019	10-Sep-2019	10-Sep-2019	09-Sep-2019	10-Sep-2019	10-Sep-2019	10-Sep-2019
Metals in solid samples by OES	09-Sep-2019	09-Sep-2019	09-Sep-2019	06-Sep-2019	06-Sep-2019	09-Sep-2019	09-Sep-2019	10-Sep-2019	06-Sep-2019	06-Sep-2019
PAH by GCMS	05-Sep-2019	12-Sep-2019	12-Sep-2019	05-Sep-2019	02-Sep-2019	11-Sep-2019	12-Sep-2019	12-Sep-2019	02-Sep-2019	09-Sep-2019
PAH Spec MS - Aqueous (W)	12-Sep-2019	12-Sep-2019	12-Sep-2019	12-Sep-2019	12-Sep-2019	12-Sep-2019	12-Sep-2019	12-Sep-2019	12-Sep-2019	11-Sep-2019
pH	11-Sep-2019	11-Sep-2019	11-Sep-2019	11-Sep-2019	03-Sep-2019	11-Sep-2019	11-Sep-2019	11-Sep-2019	12-Sep-2019	03-Sep-2019
pH Value	11-Sep-2019	12-Sep-2019	11-Sep-2019	11-Sep-2019	12-Sep-2019	11-Sep-2019	12-Sep-2019	11-Sep-2019	11-Sep-2019	11-Sep-2019
Phenols by HPLC (S)	12-Sep-2019	03-Sep-2019	04-Sep-2019	07-Sep-2019	03-Sep-2019	12-Sep-2019	03-Sep-2019	05-Sep-2019	03-Sep-2019	07-Sep-2019
Phenols by HPLC (W)	12-Sep-2019	12-Sep-2019	12-Sep-2019	12-Sep-2019	11-Sep-2019	12-Sep-2019	12-Sep-2019	11-Sep-2019	11-Sep-2019	11-Sep-2019
Sample description	29-Aug-2019	29-Aug-2019	29-Aug-2019	28-Aug-2019	28-Aug-2019	29-Aug-2019	29-Aug-2019	29-Aug-2019	28-Aug-2019	28-Aug-2019
Total Organic Carbon	12-Sep-2019	12-Sep-2019	11-Sep-2019	11-Sep-2019	12-Sep-2019	11-Sep-2019	11-Sep-2019	12-Sep-2019	11-Sep-2019	11-Sep-2019
Total Sulphate	09-Sep-2019	06-Sep-2019	05-Sep-2019	06-Sep-2019	09-Sep-2019	09-Sep-2019	09-Sep-2019	09-Sep-2019	09-Sep-2019	05-Sep-2019
Total Sulphur	12-Sep-2019	05-Sep-2019	05-Sep-2019	04-Sep-2019	04-Sep-2019	05-Sep-2019	11-Sep-2019	11-Sep-2019	04-Sep-2019	03-Sep-2019
TPH CWG (W)	13-Sep-2019	12-Sep-2019	12-Sep-2019	13-Sep-2019	12-Sep-2019	12-Sep-2019	12-Sep-2019	12-Sep-2019	12-Sep-2019	12-Sep-2019
TPH CWG GC (S)	11-Sep-2019	11-Sep-2019	11-Sep-2019	11-Sep-2019	11-Sep-2019	11-Sep-2019	11-Sep-2019	11-Sep-2019	11-Sep-2019	12-Sep-2019
VOC MS (S)	11-Sep-2019	11-Sep-2019	11-Sep-2019	11-Sep-2019	11-Sep-2019	11-Sep-2019	11-Sep-2019	11-Sep-2019	11-Sep-2019	11-Sep-2019

Validated

CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

Lab Sample No(s)	20598340	20598478	20598715	20598729	20598741	20598817	20598911	20598922	20598930	20598217
Customer Sample Ref.	CPB18	CPB18	CPBP101	CPBP101	CPBP101	CPBR3	CPBR3	CPBR3	CPBR3	CPBR4
AGS Ref.										
Depth	0.50 - 0.50	1.90 - 1.90	0.30 - 0.30	1.00 - 1.00	1.50 - 1.50	9.10 - 9.10	3.40 - 3.40	4.80 - 4.80	7.40 - 7.40	2.50 - 2.50
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
Ammonium Low	12-Sep-2019		12-Sep-2019	12-Sep-2019	12-Sep-2019	12-Sep-2019	10-Sep-2019	12-Sep-2019	12-Sep-2019	10-Sep-2019
Ammonium Soil by Titration	10-Sep-2019	10-Sep-2019	10-Sep-2019	10-Sep-2019	10-Sep-2019	11-Sep-2019	11-Sep-2019	11-Sep-2019	11-Sep-2019	10-Sep-2019
Anions by Kone (soil)	04-Sep-2019	03-Sep-2019	05-Sep-2019	04-Sep-2019	05-Sep-2019	05-Sep-2019	04-Sep-2019	04-Sep-2019	05-Sep-2019	07-Sep-2019
Asbestos ID in Solid Samples	30-Aug-2019	03-Sep-2019	30-Aug-2019	30-Aug-2019	30-Aug-2019	04-Sep-2019	04-Sep-2019	04-Sep-2019	04-Sep-2019	02-Sep-2019
Asbestos Quantification - Full		11-Sep-2019		11-Sep-2019						
CEN 10:1 Leachate (1 Stage)	05-Sep-2019		06-Sep-2019	06-Sep-2019	06-Sep-2019	06-Sep-2019	05-Sep-2019	12-Sep-2019	06-Sep-2019	05-Sep-2019
CEN Readings	09-Sep-2019		08-Sep-2019	09-Sep-2019	09-Sep-2019	09-Sep-2019	09-Sep-2019	11-Sep-2019	11-Sep-2019	09-Sep-2019
Cyanide Comp/Free/Total/Thiocyanate	09-Sep-2019	03-Sep-2019	12-Sep-2019	12-Sep-2019	12-Sep-2019	12-Sep-2019	10-Sep-2019	12-Sep-2019	12-Sep-2019	09-Sep-2019
Dissolved Metals by ICP-MS	14-Sep-2019		13-Sep-2019	13-Sep-2019	13-Sep-2019	13-Sep-2019	17-Sep-2019	14-Sep-2019	13-Sep-2019	17-Sep-2019
EPH CWG (Aliphatic) Aqueous GC (W)	12-Sep-2019		13-Sep-2019	12-Sep-2019	13-Sep-2019	12-Sep-2019	12-Sep-2019	12-Sep-2019	13-Sep-2019	13-Sep-2019
EPH CWG (Aliphatic) GC (S)	03-Sep-2019	03-Sep-2019	03-Sep-2019	04-Sep-2019	04-Sep-2019	11-Sep-2019	11-Sep-2019	11-Sep-2019	11-Sep-2019	04-Sep-2019
EPH CWG (Aromatic) Aqueous GC (W)	12-Sep-2019		13-Sep-2019	12-Sep-2019	13-Sep-2019	12-Sep-2019	12-Sep-2019	12-Sep-2019	13-Sep-2019	13-Sep-2019
EPH CWG (Aromatic) GC (S)	03-Sep-2019	03-Sep-2019	03-Sep-2019	04-Sep-2019	04-Sep-2019	11-Sep-2019	11-Sep-2019	11-Sep-2019	11-Sep-2019	04-Sep-2019
GRO by GC-FID (S)	12-Sep-2019	12-Sep-2019	12-Sep-2019	12-Sep-2019	12-Sep-2019	12-Sep-2019	11-Sep-2019	11-Sep-2019	11-Sep-2019	12-Sep-2019
GRO by GC-FID (W)	10-Sep-2019		10-Sep-2019	10-Sep-2019	10-Sep-2019	10-Sep-2019	10-Sep-2019	11-Sep-2019	11-Sep-2019	10-Sep-2019
Mercury Dissolved	10-Sep-2019		10-Sep-2019	10-Sep-2019	10-Sep-2019	10-Sep-2019	11-Sep-2019	12-Sep-2019	12-Sep-2019	11-Sep-2019
Metals in solid samples by OES	09-Sep-2019	06-Sep-2019	10-Sep-2019	10-Sep-2019	10-Sep-2019	06-Sep-2019	10-Sep-2019	09-Sep-2019	10-Sep-2019	09-Sep-2019
PAH by GCMS	09-Sep-2019	04-Sep-2019	12-Sep-2019	12-Sep-2019	04-Sep-2019	05-Sep-2019	12-Sep-2019	05-Sep-2019	05-Sep-2019	04-Sep-2019
PAH Spec MS - Aqueous (W)	11-Sep-2019		12-Sep-2019	12-Sep-2019	12-Sep-2019	12-Sep-2019	12-Sep-2019	12-Sep-2019	12-Sep-2019	12-Sep-2019
pH	12-Sep-2019	12-Sep-2019	11-Sep-2019	12-Sep-2019	11-Sep-2019	11-Sep-2019	12-Sep-2019	12-Sep-2019	11-Sep-2019	11-Sep-2019
pH Value	11-Sep-2019		11-Sep-2019	11-Sep-2019	10-Sep-2019	11-Sep-2019	11-Sep-2019	12-Sep-2019	12-Sep-2019	11-Sep-2019
Phenols by HPLC (S)	07-Sep-2019	12-Sep-2019	12-Sep-2019	09-Sep-2019	05-Sep-2019	12-Sep-2019	12-Sep-2019	12-Sep-2019	12-Sep-2019	05-Sep-2019
Phenols by HPLC (W)	11-Sep-2019		12-Sep-2019	12-Sep-2019	12-Sep-2019	12-Sep-2019	12-Sep-2019	12-Sep-2019	12-Sep-2019	11-Sep-2019
Sample description	28-Aug-2019	29-Aug-2019	29-Aug-2019	29-Aug-2019	29-Aug-2019	29-Aug-2019	29-Aug-2019	29-Aug-2019	29-Aug-2019	29-Aug-2019
Total Organic Carbon	12-Sep-2019	12-Sep-2019	11-Sep-2019	12-Sep-2019	11-Sep-2019	12-Sep-2019	12-Sep-2019	12-Sep-2019	12-Sep-2019	12-Sep-2019
Total Sulphate	09-Sep-2019	09-Sep-2019	05-Sep-2019	05-Sep-2019	09-Sep-2019	06-Sep-2019	09-Sep-2019	06-Sep-2019	06-Sep-2019	06-Sep-2019
Total Sulphur	05-Sep-2019	04-Sep-2019	06-Sep-2019	06-Sep-2019	06-Sep-2019	04-Sep-2019	11-Sep-2019	11-Sep-2019	11-Sep-2019	04-Sep-2019
TPH CWG (W)	12-Sep-2019		13-Sep-2019	12-Sep-2019	13-Sep-2019	12-Sep-2019	12-Sep-2019	12-Sep-2019	13-Sep-2019	13-Sep-2019
TPH CWG GC (S)	12-Sep-2019	12-Sep-2019	12-Sep-2019	12-Sep-2019	12-Sep-2019	12-Sep-2019	11-Sep-2019	11-Sep-2019	11-Sep-2019	12-Sep-2019
VOC MS (S)	11-Sep-2019	11-Sep-2019	10-Sep-2019	11-Sep-2019	10-Sep-2019	11-Sep-2019	11-Sep-2019	11-Sep-2019	11-Sep-2019	11-Sep-2019

Lab Sample No(s)	20598227	20598239	20598248	20598939	20598946	20598956	20598388	20598407	20598417	20598362
Customer Sample Ref.	CPBR4	CPBR4	CPBR4	CPBR9	CPBR9	CPBR9	WS01	WS01	WS01	WS04
AGS Ref.										
Depth	3.50 - 3.50	7.50 - 7.50	9.40 - 9.40	3.10 - 3.10	4.20 - 4.20	8.80 - 8.80	0.30 - 0.30	0.50 - 0.50	1.80 - 1.80	0.30 - 0.30
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
Ammonium Low	10-Sep-2019	12-Sep-2019		12-Sep-2019	12-Sep-2019	12-Sep-2019	12-Sep-2019	12-Sep-2019		12-Sep-2019
Ammonium Soil by Titration	10-Sep-2019	11-Sep-2019	11-Sep-2019	11-Sep-2019	11-Sep-2019	11-Sep-2019	11-Sep-2019	10-Sep-2019	13-Sep-2019	11-Sep-2019
Anions by Kone (soil)	07-Sep-2019	07-Sep-2019	07-Sep-2019	07-Sep-2019	07-Sep-2019	04-Sep-2019	05-Sep-2019	07-Sep-2019		07-Sep-2019
Asbestos ID in Solid Samples	04-Sep-2019	03-Sep-2019	03-Sep-2019	03-Sep-2019	03-Sep-2019	30-Aug-2019	30-Aug-2019	30-Aug-2019		02-Sep-2019
Asbestos Quantification - Full										11-Sep-2019
CEN 10:1 Leachate (1 Stage)	05-Sep-2019	05-Sep-2019		05-Sep-2019	05-Sep-2019	05-Sep-2019	12-Sep-2019	12-Sep-2019		05-Sep-2019
CEN Readings	09-Sep-2019	09-Sep-2019		09-Sep-2019	09-Sep-2019	09-Sep-2019	11-Sep-2019	11-Sep-2019		08-Sep-2019
Cyanide Comp/Free/Total/Thiocyanate	09-Sep-2019	10-Sep-2019	11-Sep-2019	11-Sep-2019	11-Sep-2019	11-Sep-2019	12-Sep-2019	12-Sep-2019	13-Sep-2019	09-Sep-2019
Dissolved Metals by ICP-MS	14-Sep-2019	14-Sep-2019		14-Sep-2019	14-Sep-2019	14-Sep-2019	14-Sep-2019	14-Sep-2019		17-Sep-2019
EPH CWG (Aliphatic) Aqueous GC (W)	12-Sep-2019	12-Sep-2019		12-Sep-2019	13-Sep-2019	12-Sep-2019	12-Sep-2019	12-Sep-2019		13-Sep-2019
EPH CWG (Aliphatic) GC (S)	04-Sep-2019	11-Sep-2019	11-Sep-2019	11-Sep-2019	11-Sep-2019	11-Sep-2019	03-Sep-2019	03-Sep-2019	13-Sep-2019	03-Sep-2019
EPH CWG (Aromatic) Aqueous GC (W)	12-Sep-2019	12-Sep-2019		12-Sep-2019	13-Sep-2019	12-Sep-2019	12-Sep-2019	12-Sep-2019		13-Sep-2019
EPH CWG (Aromatic) GC (S)	04-Sep-2019	11-Sep-2019	11-Sep-2019	11-Sep-2019	11-Sep-2019	11-Sep-2019	03-Sep-2019	03-Sep-2019	13-Sep-2019	03-Sep-2019
GRO by GC-FID (S)	11-Sep-2019	11-Sep-2019	12-Sep-2019	11-Sep-2019	11-Sep-2019	11-Sep-2019	12-Sep-2019	12-Sep-2019		11-Sep-2019
GRO by GC-FID (W)	10-Sep-2019	09-Sep-2019		10-Sep-2019	09-Sep-2019	10-Sep-2019	13-Sep-2019	11-Sep-2019		10-Sep-2019
Mercury Dissolved	11-Sep-2019	10-Sep-2019		10-Sep-2019	10-Sep-2019	10-Sep-2019	12-Sep-2019	12-Sep-2019		10-Sep-2019
Metals in solid samples by OES	09-Sep-2019	09-Sep-2019	06-Sep-2019	09-Sep-2019	09-Sep-2019	06-Sep-2019	10-Sep-2019	09-Sep-2019		10-Sep-2019
PAH by GCMS	04-Sep-2019	11-Sep-2019	12-Sep-2019	05-Sep-2019	05-Sep-2019	05-Sep-2019	05-Sep-2019	05-Sep-2019	13-Sep-2019	11-Sep-2019
PAH Spec MS - Aqueous (W)	12-Sep-2019	12-Sep-2019		12-Sep-2019	12-Sep-2019	12-Sep-2019	12-Sep-2019	12-Sep-2019		12-Sep-2019
pH	11-Sep-2019	11-Sep-2019	12-Sep-2019	12-Sep-2019	11-Sep-2019	12-Sep-2019	11-Sep-2019	12-Sep-2019	12-Sep-2019	12-Sep-2019
pH Value	11-Sep-2019	11-Sep-2019		11-Sep-2019	11-Sep-2019	10-Sep-2019	12-Sep-2019	12-Sep-2019		11-Sep-2019
Phenols by HPLC (S)	05-Sep-2019	12-Sep-2019	12-Sep-2019	12-Sep-2019	12-Sep-2019	12-Sep-2019	07-Sep-2019	07-Sep-2019	13-Sep-2019	03-Sep-2019
Phenols by HPLC (W)	12-Sep-2019	12-Sep-2019		12-Sep-2019	12-Sep-2019	11-Sep-2019	13-Sep-2019	13-Sep-2019		11-Sep-2019
Sample description	29-Aug-2019	29-Aug-2019	29-Aug-2019	29-Aug-2019	29-Aug-2019	29-Aug-2019	28-Aug-2019	28-Aug-2019	29-Aug-2019	29-Aug-2019
Total Organic Carbon	11-Sep-2019	11-Sep-2019	11-Sep-2019	11-Sep-2019	11-Sep-2019	12-Sep-2019	11-Sep-2019	11-Sep-2019		11-Sep-2019
Total Sulphate	06-Sep-2019	06-Sep-2019	09-Sep-2019	06-Sep-2019	09-Sep-2019	09-Sep-2019	06-Sep-2019	09-Sep-2019		09-Sep-2019
Total Sulphur	05-Sep-2019	12-Sep-2019	06-Sep-2019	11-Sep-2019	11-Sep-2019	06-Sep-2019	04-Sep-2019	04-Sep-2019		04-Sep-2019
TPH CWG (W)	12-Sep-2019	12-Sep-2019		12-Sep-2019	13-Sep-2019	12-Sep-2019	13-Sep-2019	12-Sep-2019		13-Sep-2019
TPH CWG GC (S)	11-Sep-2019	11-Sep-2019	12-Sep-2019	11-Sep-2019	11-Sep-2019	11-Sep-2019	12-Sep-2019	12-Sep-2019		11-Sep-2019
VOC MS (S)	11-Sep-2019	11-Sep-2019	10-Sep-2019	11-Sep-2019	11-Sep-2019	11-Sep-2019	11-Sep-2019	11-Sep-2019		12-Sep-2019

Validated

CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

Lab Sample No(s)	20598372	20598505	20598264	20598278	20598286	20598295	20598310	20598327	20598351	20598518
Customer Sample Ref.	WS04	WS04	WS13	WS13	WS13	WS13	WS19	WS19	WS19	WS20
AGS Ref.										
Depth	1.00 - 1.00	3.40 - 3.80	0.30 - 0.30	0.50 - 0.50	1.00 - 1.00	1.80 - 1.80	0.30 - 0.30	1.00 - 1.00	1.80 - 1.80	1.80 - 1.80
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
Ammonium Low	12-Sep-2019	10-Sep-2019	12-Sep-2019	12-Sep-2019			12-Sep-2019	12-Sep-2019		
Ammonium Soil by Titration	11-Sep-2019	11-Sep-2019	10-Sep-2019	11-Sep-2019	11-Sep-2019	11-Sep-2019	10-Sep-2019	11-Sep-2019	10-Sep-2019	10-Sep-2019
Anions by Kone (soil)	04-Sep-2019	07-Sep-2019	05-Sep-2019	05-Sep-2019	07-Sep-2019	07-Sep-2019	05-Sep-2019	05-Sep-2019	07-Sep-2019	07-Sep-2019
Asbestos ID in Solid Samples	03-Sep-2019	03-Sep-2019	30-Aug-2019	30-Aug-2019	02-Sep-2019	04-Sep-2019	30-Aug-2019	30-Aug-2019	04-Sep-2019	03-Sep-2019
CEN 10:1 Leachate (1 Stage)	05-Sep-2019	05-Sep-2019	05-Sep-2019	05-Sep-2019			05-Sep-2019	05-Sep-2019		
CEN Readings	09-Sep-2019	09-Sep-2019	09-Sep-2019	09-Sep-2019			09-Sep-2019	09-Sep-2019		
Cyanide Comp/Free/Total/Thiocyanate	09-Sep-2019	09-Sep-2019	10-Sep-2019	10-Sep-2019	11-Sep-2019	11-Sep-2019	10-Sep-2019	09-Sep-2019	02-Sep-2019	02-Sep-2019
Dissolved Metals by ICP-MS	14-Sep-2019	14-Sep-2019	14-Sep-2019	14-Sep-2019			14-Sep-2019	14-Sep-2019		
EPH CWG (Aliphatic) Aqueous GC (W)	12-Sep-2019	12-Sep-2019	12-Sep-2019	12-Sep-2019			12-Sep-2019	12-Sep-2019		
EPH CWG (Aliphatic) GC (S)	04-Sep-2019	03-Sep-2019	11-Sep-2019	11-Sep-2019	11-Sep-2019	11-Sep-2019	04-Sep-2019	04-Sep-2019	04-Sep-2019	03-Sep-2019
EPH CWG (Aromatic) Aqueous GC (W)	12-Sep-2019	12-Sep-2019	12-Sep-2019	12-Sep-2019			12-Sep-2019	12-Sep-2019		
EPH CWG (Aromatic) GC (S)	04-Sep-2019	03-Sep-2019	11-Sep-2019	11-Sep-2019	11-Sep-2019	11-Sep-2019	04-Sep-2019	04-Sep-2019	04-Sep-2019	03-Sep-2019
GRO by GC-FID (S)	11-Sep-2019	11-Sep-2019	12-Sep-2019	12-Sep-2019	11-Sep-2019	12-Sep-2019	11-Sep-2019	12-Sep-2019	12-Sep-2019	11-Sep-2019
GRO by GC-FID (W)	09-Sep-2019	09-Sep-2019	10-Sep-2019	09-Sep-2019			09-Sep-2019	10-Sep-2019		
Mercury Dissolved	10-Sep-2019	11-Sep-2019	09-Sep-2019	10-Sep-2019			10-Sep-2019	10-Sep-2019		
Metals in solid samples by OES	09-Sep-2019	09-Sep-2019	06-Sep-2019	09-Sep-2019	09-Sep-2019	09-Sep-2019	09-Sep-2019	06-Sep-2019	09-Sep-2019	06-Sep-2019
PAH by GCMS	11-Sep-2019	05-Sep-2019	12-Sep-2019	02-Sep-2019	05-Sep-2019	02-Sep-2019	05-Sep-2019	05-Sep-2019	05-Sep-2019	05-Sep-2019
PAH Spec MS - Aqueous (W)	12-Sep-2019	12-Sep-2019	12-Sep-2019	12-Sep-2019			12-Sep-2019	12-Sep-2019		
pH	11-Sep-2019	03-Sep-2019	11-Sep-2019	12-Sep-2019	11-Sep-2019	11-Sep-2019	03-Sep-2019	03-Sep-2019	11-Sep-2019	03-Sep-2019
pH Value	11-Sep-2019	11-Sep-2019	10-Sep-2019	12-Sep-2019			11-Sep-2019	11-Sep-2019		
Phenols by HPLC (S)	12-Sep-2019	03-Sep-2019	12-Sep-2019	12-Sep-2019	12-Sep-2019	12-Sep-2019	11-Sep-2019	07-Sep-2019	03-Sep-2019	07-Sep-2019
Phenols by HPLC (W)	12-Sep-2019	11-Sep-2019	11-Sep-2019	12-Sep-2019			12-Sep-2019	12-Sep-2019		
Sample description	29-Aug-2019	28-Aug-2019	29-Aug-2019	29-Aug-2019	29-Aug-2019	29-Aug-2019	29-Aug-2019	29-Aug-2019	29-Aug-2019	28-Aug-2019
Total Organic Carbon	12-Sep-2019	12-Sep-2019	11-Sep-2019	11-Sep-2019	11-Sep-2019	11-Sep-2019	11-Sep-2019	12-Sep-2019	12-Sep-2019	12-Sep-2019
Total Sulphate	09-Sep-2019	09-Sep-2019	09-Sep-2019	09-Sep-2019	06-Sep-2019	09-Sep-2019	09-Sep-2019	09-Sep-2019	09-Sep-2019	09-Sep-2019
Total Sulphur	05-Sep-2019	05-Sep-2019	03-Sep-2019	04-Sep-2019	04-Sep-2019	11-Sep-2019	04-Sep-2019	04-Sep-2019	05-Sep-2019	04-Sep-2019
TPH CWG (W)	12-Sep-2019	12-Sep-2019	12-Sep-2019	12-Sep-2019			12-Sep-2019	12-Sep-2019		
TPH CWG GC (S)	11-Sep-2019	11-Sep-2019	12-Sep-2019	12-Sep-2019	11-Sep-2019	12-Sep-2019	11-Sep-2019	12-Sep-2019	12-Sep-2019	11-Sep-2019
VOC MS (S)	11-Sep-2019	11-Sep-2019	11-Sep-2019	11-Sep-2019	11-Sep-2019	12-Sep-2019	11-Sep-2019	11-Sep-2019	11-Sep-2019	11-Sep-2019

Lab Sample No(s)	20598585	20598597	20598613	20598682	20598696	20598707	20598541	20598552	20598565	20598757
Customer Sample Ref.	WSBP104	WSBP104	WSBP104	WSBP105	WSBP105	WSBP105	WSBP108	WSBP108	WSBP108	WSBP108
AGS Ref.										
Depth	0.30 - 0.30	1.00 - 1.00	1.80 - 1.80	0.30 - 0.30	1.00 - 1.00	1.40 - 1.40	0.30 - 0.30	1.00 - 1.00	1.50 - 1.50	2.10 - 2.50
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
Ammonium Low	12-Sep-2019	12-Sep-2019	12-Sep-2019	12-Sep-2019	12-Sep-2019		12-Sep-2019	12-Sep-2019		12-Sep-2019
Ammonium Soil by Titration	11-Sep-2019	11-Sep-2019	11-Sep-2019	11-Sep-2019	11-Sep-2019	11-Sep-2019	11-Sep-2019	10-Sep-2019	11-Sep-2019	11-Sep-2019
Anions by Kone (soil)	07-Sep-2019	05-Sep-2019	07-Sep-2019	07-Sep-2019	07-Sep-2019	07-Sep-2019	07-Sep-2019	07-Sep-2019	05-Sep-2019	07-Sep-2019
Asbestos ID in Solid Samples	02-Sep-2019	02-Sep-2019	04-Sep-2019	04-Sep-2019	30-Aug-2019	04-Sep-2019	30-Aug-2019	02-Sep-2019	04-Sep-2019	30-Aug-2019
CEN 10:1 Leachate (1 Stage)	07-Sep-2019	07-Sep-2019	12-Sep-2019	06-Sep-2019	05-Sep-2019		05-Sep-2019	05-Sep-2019		06-Sep-2019
CEN Readings	11-Sep-2019	11-Sep-2019	11-Sep-2019	09-Sep-2019	09-Sep-2019		09-Sep-2019	09-Sep-2019		09-Sep-2019
Cyanide Comp/Free/Total/Thiocyanate	12-Sep-2019	12-Sep-2019	12-Sep-2019	12-Sep-2019	11-Sep-2019	11-Sep-2019	11-Sep-2019	11-Sep-2019	11-Sep-2019	12-Sep-2019
Dissolved Metals by ICP-MS	14-Sep-2019	14-Sep-2019	13-Sep-2019	13-Sep-2019	14-Sep-2019		17-Sep-2019	14-Sep-2019		13-Sep-2019
EPH CWG (Aliphatic) Aqueous GC (W)	13-Sep-2019	13-Sep-2019	12-Sep-2019	12-Sep-2019	12-Sep-2019		13-Sep-2019	12-Sep-2019		13-Sep-2019
EPH CWG (Aliphatic) GC (S)	03-Sep-2019	11-Sep-2019	11-Sep-2019	11-Sep-2019	11-Sep-2019	11-Sep-2019	11-Sep-2019	11-Sep-2019	11-Sep-2019	03-Sep-2019
EPH CWG (Aromatic) Aqueous GC (W)	13-Sep-2019	13-Sep-2019	12-Sep-2019	12-Sep-2019	12-Sep-2019		13-Sep-2019	12-Sep-2019		13-Sep-2019
EPH CWG (Aromatic) GC (S)	03-Sep-2019	11-Sep-2019	11-Sep-2019	11-Sep-2019	11-Sep-2019	11-Sep-2019	11-Sep-2019	11-Sep-2019	11-Sep-2019	03-Sep-2019
GRO by GC-FID (S)	11-Sep-2019	12-Sep-2019	12-Sep-2019	12-Sep-2019	12-Sep-2019	12-Sep-2019	12-Sep-2019	12-Sep-2019	12-Sep-2019	11-Sep-2019
GRO by GC-FID (W)	11-Sep-2019	11-Sep-2019	11-Sep-2019	10-Sep-2019	10-Sep-2019		10-Sep-2019	10-Sep-2019		10-Sep-2019
Mercury Dissolved	12-Sep-2019	12-Sep-2019	12-Sep-2019	10-Sep-2019	10-Sep-2019		10-Sep-2019	10-Sep-2019		10-Sep-2019
Metals in solid samples by OES	09-Sep-2019	06-Sep-2019	09-Sep-2019	10-Sep-2019	10-Sep-2019	10-Sep-2019	09-Sep-2019	09-Sep-2019	09-Sep-2019	09-Sep-2019
PAH by GCMS	11-Sep-2019	10-Sep-2019	12-Sep-2019	12-Sep-2019	12-Sep-2019	12-Sep-2019	12-Sep-2019	12-Sep-2019	12-Sep-2019	03-Sep-2019
PAH Spec MS - Aqueous (W)	12-Sep-2019	12-Sep-2019	12-Sep-2019	12-Sep-2019	12-Sep-2019		12-Sep-2019	12-Sep-2019		12-Sep-2019
pH	11-Sep-2019	11-Sep-2019	11-Sep-2019	11-Sep-2019	11-Sep-2019	12-Sep-2019	11-Sep-2019	11-Sep-2019	11-Sep-2019	11-Sep-2019
pH Value	12-Sep-2019	12-Sep-2019	12-Sep-2019	11-Sep-2019	11-Sep-2019		11-Sep-2019	11-Sep-2019		10-Sep-2019
Phenols by HPLC (S)	03-Sep-2019	11-Sep-2019	12-Sep-2019	12-Sep-2019	12-Sep-2019	12-Sep-2019	12-Sep-2019	12-Sep-2019	12-Sep-2019	03-Sep-2019
Phenols by HPLC (W)	12-Sep-2019	12-Sep-2019	12-Sep-2019	12-Sep-2019	12-Sep-2019		11-Sep-2019	11-Sep-2019		11-Sep-2019
Sample description	29-Aug-2019	29-Aug-2019	29-Aug-2019	29-Aug-2019	29-Aug-2019	29-Aug-2019	29-Aug-2019	29-Aug-2019	29-Aug-2019	28-Aug-2019
Total Organic Carbon	12-Sep-2019	12-Sep-2019	12-Sep-2019	11-Sep-2019	11-Sep-2019	12-Sep-2019	11-Sep-2019	11-Sep-2019	12-Sep-2019	12-Sep-2019
Total Sulphate	09-Sep-2019	09-Sep-2019	09-Sep-2019	06-Sep-2019	09-Sep-2019	05-Sep-2019	09-Sep-2019	09-Sep-2019	09-Sep-2019	06-Sep-2019
Total Sulphur	05-Sep-2019	04-Sep-2019	06-Sep-2019	04-Sep-2019	04-Sep-2019	05-Sep-2019	05-Sep-2019	04-Sep-2019	05-Sep-2019	05-Sep-2019
TPH CWG (W)	13-Sep-2019	13-Sep-2019	12-Sep-2019	12-Sep-2019	12-Sep-2019		13-Sep-2019	12-Sep-2019		13-Sep-2019
TPH CWG GC (S)	11-Sep-2019	12-Sep-2019	12-Sep-2019	12-Sep-2019	12-Sep-2019	12-Sep-2019	12-Sep-2019	12-Sep-2019	12-Sep-2019	11-Sep-2019
VOC MS (S)	11-Sep-2019	10-Sep-2019	11-Sep-2019	11-Sep-2019	11-Sep-2019	11-Sep-2019	10-Sep-2019	11-Sep-2019	11-Sep-2019	11-Sep-2019

Validated

CERTIFICATE OF ANALYSIS

SDG:	190828-36	**Client Reference:**		**Report Number:**	522548
Location:	Llanwern	**Order Number:**	LLA654	**Superseded Report:**	521395

Lab Sample No(s)	20598778	20598625	20598767	20598871
Customer Sample Ref.	WSBP108	WSBP109	WSBP109	WSBP109
AGS Ref.				
Depth	3.40 - 4.00	0.30 - 0.30	1.00 - 1.00	1.60 - 1.60
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
Ammonium Low	12-Sep-2019	12-Sep-2019	12-Sep-2019	
Ammonium Soil by Titration	10-Sep-2019	11-Sep-2019	10-Sep-2019	10-Sep-2019
Anions by Kone (soil)	05-Sep-2019	04-Sep-2019	03-Sep-2019	07-Sep-2019
Asbestos ID in Solid Samples	05-Sep-2019	30-Aug-2019	30-Aug-2019	04-Sep-2019
CEN 10:1 Leachate (1 Stage)	05-Sep-2019	12-Sep-2019	05-Sep-2019	
CEN Readings	09-Sep-2019	11-Sep-2019	09-Sep-2019	
Cyanide Comp/Free/Total/Thiocyanate	10-Sep-2019	12-Sep-2019	09-Sep-2019	02-Sep-2019
Dissolved Metals by ICP-MS	17-Sep-2019	14-Sep-2019	14-Sep-2019	
EPH CWG (Aliphatic) Aqueous GC (W)	12-Sep-2019	12-Sep-2019	12-Sep-2019	
EPH CWG (Aliphatic) GC (S)	03-Sep-2019	03-Sep-2019	03-Sep-2019	03-Sep-2019
EPH CWG (Aromatic) Aqueous GC (W)	12-Sep-2019	12-Sep-2019	12-Sep-2019	
EPH CWG (Aromatic) GC (S)	03-Sep-2019	03-Sep-2019	03-Sep-2019	03-Sep-2019
GRO by GC-FID (S)	11-Sep-2019	12-Sep-2019	12-Sep-2019	12-Sep-2019
GRO by GC-FID (W)	10-Sep-2019	11-Sep-2019	10-Sep-2019	
Mercury Dissolved	10-Sep-2019	12-Sep-2019	10-Sep-2019	
Metals in solid samples by OES	09-Sep-2019	09-Sep-2019	06-Sep-2019	10-Sep-2019
PAH by GCMS	04-Sep-2019	09-Sep-2019	12-Sep-2019	04-Sep-2019
PAH Spec MS - Aqueous (W)	12-Sep-2019	12-Sep-2019	11-Sep-2019	
pH	11-Sep-2019	11-Sep-2019	11-Sep-2019	11-Sep-2019
pH Value	10-Sep-2019	12-Sep-2019	12-Sep-2019	
Phenols by HPLC (S)	07-Sep-2019	05-Sep-2019	11-Sep-2019	09-Sep-2019
Phenols by HPLC (W)	12-Sep-2019	13-Sep-2019	11-Sep-2019	
Sample description	28-Aug-2019	29-Aug-2019	29-Aug-2019	28-Aug-2019
Total Organic Carbon	11-Sep-2019	11-Sep-2019	12-Sep-2019	12-Sep-2019
Total Sulphate	06-Sep-2019	06-Sep-2019	09-Sep-2019	09-Sep-2019
Total Sulphur	05-Sep-2019	06-Sep-2019	04-Sep-2019	05-Sep-2019
TPH CWG (W)	12-Sep-2019	12-Sep-2019	12-Sep-2019	
TPH CWG GC (S)	11-Sep-2019	12-Sep-2019	12-Sep-2019	12-Sep-2019
VOC MS (S)	11-Sep-2019	12-Sep-2019	11-Sep-2019	12-Sep-2019

Appendix General

1. Results are expressed on a dry weight basis (dried at 35ºC) for all soil analyses except for the following: NRA and CEN Leach tests, flash point LOI, pH, ammonium as NH4 by the BRE method, VOC TICs and SVOC TICs.

2. If sufficient sample is received a sub sample will be retained free of charge for 30 days after analysis is completed (e-mailed) for all sample types unless the sample is destroyed on testing. The prepared soil sub sample that is analysed for asbestos will be retained for a period of 6 months after the analysis date. All bulk samples will be retained for a period of 6 months after the analysis date. All samples received and not scheduled will be disposed of one month after the date of receipt unless we are instructed to the contrary. Once the initial period has expired, a storage charge will be applied for each month or part thereof until the client cancels the request for sample storage. ALS reserve the right to charge for samples received and stored but not analysed.

3. With respect to turnaround, we will always endeavour to meet client requirements wherever possible, but turnaround times cannot be absolutely guaranteed due to so many variables beyond our control.

4. We take responsibility for any test performed by sub-contractors (marked with an asterisk). We endeavour to use UKAS/MCERTS Accredited Laboratories, who either complete a quality questionnaire or are audited by ourselves. For some determinands there are no UKAS/MCERTS Accredited Laboratories, in this instance a laboratory with a known track record will be utilised.

5. If no separate volatile sample is supplied by the client, or if a headspace or sediment is present in the volatile sample, the integrity of the data may be compromised. This will be flagged up as an invalid VOC on the test schedule and the result marked as deviating on the test certificate.

6. NDP - No determination possible due to insufficient/unsuitable sample.

7. Results relate only to the items tested.

8. LoDs (Limit of Detection) for wet tests reported on a dry weight basis are not corrected for moisture content.

9. **Surrogate recoveries** - Surrogates are added to your sample to monitor recovery of the test requested. A % recovery is reported, results are not corrected for the recovery measured. Typical recoveries for organics tests are 70-130%. Recoveries in soils are affected by organic rich or clay rich matrices. Waters can be affected by remediation fluids or high amounts of sediment. Test results are only ever reported if all of the associated quality checks pass; it is assumed that all recoveries outside of the values above are due to matrix affect.

10. Stones/debris are not routinely removed. We always endeavour to take a representative sub sample from the received sample.

11. In certain circumstances the method detection limit may be elevated due to the sample being outside the calibration range. Other factors that may contribute to this include possible interferences. In both cases the sample would be diluted which would cause the method detection limit to be raised.

12. Mercury results quoted on soils will not include volatile mercury as the analysis is performed on a dried and crushed sample.

13. For leachate preparations other than Zero Headspace Extraction (ZHE) volatile loss may occur.

14. For the BSEN 12457-3 two batch process to allow the cumulative release to be calculated, the volume of the leachate produced is measured and filtered for all tests. We therefore cannot carry out any unfiltered analysis. The tests affected include volatiles GCFID/GCMS and all subcontracted analysis.

15. Analysis and identification of specific compounds using GCFID is by retention time only, and we routinely calibrate and quantify for benzene, toluene, ethylbenzenes and xylenes (BTEX). For total volatiles in the C5-C12 range, the total area of the chromatogram is integrated and expressed as ug/kg or ug/l. Although this analysis is commonly used for the quantification of gasoline range organics (GRO), the system will also detect other compounds such as chlorinated solvents, and this may lead to a falsely high result with respect to hydrocarbons only. It is not possible to specifically identify these non-hydrocarbons, as standards are not routinely run for any other compounds, and for more definitive identification, volatiles by GCMS should be utilised.

16. We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample. Other coarse granular material such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

17. **Tentatively Identified Compounds (TICs)** are non-target peaks in VOC and SVOC analysis. All non-target peaks detected with a concentration above the LoD are subjected to a mass spectral library search. Non-target peaks with a library search confidence of >75% are reported based on the best mass spectral library match. When a non-target peak with a library search confidence of <75% is detected it is reported as "mixed hydrocarbons". Non-target compounds identified from the scan data are semi-quantified relative to one of the deuterated internal standards, under the same chromatographic conditions as the target compounds. This result is reported as a semi-quantitative value and reported as Tentatively Identified Compounds (TICs). TICs are outside the scope of UKAS accreditation and are not moisture corrected.

18. **Sample Deviations**

If a sample is classed as deviated then the associated results may be compromised.

1	**Container with Headspace provided for volatiles analysis**
2	**Incorrect container received**
3	**Deviation from method**
§	**Sampled on date not provided**
♦	**Sample holding time exceeded in laboratory**
@	**Sample holding time exceeded due to late arrival of instructions or samples**

19. **Asbestos**

When requested, the individual sub sample scheduled will be analysed in house for the presence of asbestos fibres and asbestos containing material by our documented in house method TM048 based on HSG 248 (2005), which is accredited to ISO17025. If a specific asbestos fibre type is not found this will be reported as "Not detected". If no asbestos fibre types are found all will be reported as "Not detected" and the sub sample analysed deemed to be clear of asbestos. If an asbestos fibre type is found it will be reported as detected (for each fibre type found). Testing can be carried out on asbestos positive samples, but, due to Health and Safety considerations, may be replaced by alternative tests or reported as No Determination Possible (NDP). The quantity of

Identification of Asbestos in Bulk Materials & Soils

The results for identification of asbestos in bulk materials are obtained from supplied bulk materials which have been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

The results for identification of asbestos in soils are obtained from a homogenised sub sample which has been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

Asbestos Type	Common Name
Chrysotile	White Asbestos
Amosite	Brown Asbestos
Crocidolite	Blue Asbestos
Fibrous Actinolite	-
Fibrous Anthophyllite	-
Fibrous Tremolite	-

Visual Estimation Of Fibre Content

Estimation of fibre content is not permitted as part of our UKAS accredited test other than: - Trace - Where only one or two asbestos fibres were identified.

Respirable Fibres

Respirable fibres are defined as fibres of <3 µm diameter, longer than 5 µm and with aspect ratios of at least 3:1 that can be inhaled into the lower regions of the lung and are generally acknowledged to be most important predictor of hazard and risk for cancers of the lung.
Standing Committee of Analysts, *The Quantification of Asbestos in Soil (2107).*

Further guidance on typical asbestos fibre content of manufactured products can be found in HSG 264.

The identification of asbestos containing materials and soils falls within our schedule of tests for which we hold UKAS accreditation, however opinions, interpretations and all other information contained in the report are outside the scope of UKAS accreditation.

Unit 7-8 Hawarden Business Park
Manor Road (off Manor Lane)
Hawarden
Deeside
CH5 3US
Tel: (01244) 528700
Fax: (01244) 528701
email: hawardencustomerservices@alsglobal.com
Website: www.alsenvironmental.co.uk

Atkins Global Ltd
Project Jonah site office
Llan Coed House
Suite 24
Coed Darcy
Llandarcy
SA10 6HJ

Attention: Scott Bowler

CERTIFICATE OF ANALYSIS

Date of report Generation:	19 September 2019
Customer:	Atkins Global Ltd
Sample Delivery Group (SDG):	190909-23
Your Reference:	
Location:	Llanwern
Report No:	522124

We received 18 samples on Monday September 09, 2019 and 18 of these samples were scheduled for analysis which was completed on Thursday September 19, 2019. Accredited laboratory tests are defined within the report, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation.

Should this report require incorporation into client reports, it must be used in its entirety and not simply with the data sections alone.

Chemical testing (unless subcontracted) performed at ALS Life Sciences Ltd Hawarden (Method codes TM) or ALS Life Sciences Ltd Aberdeen (Method codes S).

All sample data is provided by the customer. The reported results relate to the sample supplied, and on the basis that this data is correct.
Incorrect sampling dates and/or sample information will affect the validity of results.
The customer is not permitted to reproduce this report except in full without the approval of the laboratory.

Approved By:

Sonia McWhan
Operations Manager

CERTIFICATE OF ANALYSIS

SDG:	190909-23	**Client Reference:**		**Report Number:**	522124
Location:	Llanwern	**Order Number:**	LLA663	**Superseded Report:**	

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
20682231	TPBP120		0.10 - 0.10	05/09/2019
20682238	TPBP120		0.90 - 0.90	05/09/2019
20682245	TPBP120		1.60 - 1.60	05/09/2019
20682252	TPBP120		1.90 - 1.90	05/09/2019
20682259	TPBP121		0.20 - 0.20	05/09/2019
20682266	TPBP121		0.50 - 0.50	05/09/2019
20682274	TPBP121		1.80 - 1.80	05/09/2019
20682281	TPBP121		2.00 - 2.00	05/09/2019
20682329	TPBP122		0.20 - 0.20	05/09/2019
20682336	TPBP122		1.00 - 1.00	05/09/2019
20682343	TPBP122		1.80 - 1.80	05/09/2019
20682204	TPBP123		0.20 - 0.20	05/09/2019
20682288	TPBP123		0.50 - 0.50	05/09/2019
20682295	TPBP123		1.50 - 1.50	05/09/2019
20682352	TPBP144		0.10 - 0.10	05/09/2019
20682359	TPBP144		0.90 - 0.90	05/09/2019
20682367	TPBP144		1.40 - 1.40	05/09/2019
20682223	TPBP144		1.80 - 1.80	05/09/2019

Maximum Sample/Coolbox Temperature (°C) : **16.8**

ISO5667-3 Water quality - Sampling - Part3 -

During Transportation samples shall be stored in a cooling device capable of maintaining a temperature of (5±3)°C.

ALS have data which show that a cool box with 4 frozen icepacks is capable of maintaining pre-chilled samples at a temperature of (5±3)°C for a period of up to 24hrs.

Only received samples which have had analysis scheduled will be shown on the following pages.

Validated

CERTIFICATE OF ANALYSIS

SDG:	190909-23	**Client Reference:**		**Report Number:**	522124
Location:	Llanwern	**Order Number:**	LLA663	**Superseded Report:**	

Results Legend

X Test

N No Determination Possible

Sample Types -
S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

			Lab Sample No(s)	20682231			20682238			20682245			20682252			20682259			20682266			20682274
			Customer Sample Reference	TPBP120			TPBP120			TPBP120			TPBP120			TPBP121			TPBP121			TPBP121
			AGS Reference																			
			Depth (m)	0.10 - 0.10			0.90 - 0.90			1.60 - 1.60			1.90 - 1.90			0.20 - 0.20			0.50 - 0.50			1.80 - 1.80
			Container	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB
			Sample Type	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
Ammonium Low	All	NDPs: 0 Tests: 13		X			X			X						X			X			X
Ammonium Soil by Titration	All	NDPs: 0 Tests: 18			X			X			X			X			X			X		
Anions by Kone (soil)	All	NDPs: 0 Tests: 18			X			X			X			X			X			X		
Asbestos ID in Solid Samples	All	NDPs: 0 Tests: 18		X			X			X			X			X			X			X
Asbestos Quantification - Full	All	NDPs: 0 Tests: 2																				X
CEN Readings	All	NDPs: 0 Tests: 13		X			X			X						X			X			X
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 31		X	X		X	X		X	X			X		X	X		X	X		X
Dissolved Metals by ICP-MS	All	NDPs: 0 Tests: 13		X			X			X						X			X			X
EPH CWG (Aliphatic) Aqueous GC (W)	All	NDPs: 0 Tests: 13		X			X			X						X			X			X
EPH CWG (Aliphatic) GC (S)	All	NDPs: 0 Tests: 18			X			X			X			X			X			X		
EPH CWG (Aromatic) Aqueous GC (W)	All	NDPs: 0 Tests: 13		X			X			X						X			X			X
EPH CWG (Aromatic) GC (S)	All	NDPs: 0 Tests: 18			X			X			X			X			X			X		
GRO by GC-FID (S)	All	NDPs: 0 Tests: 18				X			X			X			X			X			X		
GRO by GC-FID (W)	All	NDPs: 0 Tests: 13		X			X			X						X			X			X
Mercury Dissolved	All	NDPs: 0 Tests: 13		X			X			X						X			X			X

20682295	TPBP123		1.50 - 1.50	1kg TUB	S					x												
20682288	TPBP123		0.50 - 0.50	60g VOC (ALE215)	S																x	
				250g Amber Jar (ALE210)	S		x		x					x				x			x		
				1kg TUB	S	x				x			x	x		x	x			x			x	x
20682204	TPBP123		0.20 - 0.20	60g VOC (ALE215)	S																x	
				250g Amber Jar (ALE210)	S		x		x					x				x			x		
				1kg TUB	S	x				x			x	x		x	x			x			x	x
20682343	TPBP122		1.80 - 1.80	60g VOC (ALE215)	S																x	
				250g Amber Jar (ALE210)	S		x		x					x				x			x		
				1kg TUB	S	x				x			x	x		x	x			x			x	x
20682336	TPBP122		1.00 - 1.00	60g VOC (ALE215)	S																x	
				250g Amber Jar (ALE210)	S		x		x					x				x			x		
				1kg TUB	S					x												
20682329	TPBP122		0.20 - 0.20	60g VOC (ALE215)	S																x	
				250g Amber Jar (ALE210)	S		x		x					x				x			x		
				1kg TUB	S	x				x	x		x	x		x	x			x			x	x
20682281	TPBP121		2.00 - 2.00	60g VOC (ALE215)	S																x	
				250g Amber Jar (ALE210)	S		x		x					x				x			x		
				1kg TUB	S	x				x			x	x		x	x			x			x	x
20682274	TPBP121		1.80 - 1.80	60g VOC (ALE215)	S																x	
				250g Amber Jar (ALE210)	S		x		x					x				x			x		

CERTIFICATE OF ANALYSIS

SDG:	190909-23	**Client Reference:**		**Report Number:**	522124
Location:	Llanwern	**Order Number:**	LLA663	**Superseded Report:**	

Results Legend

- X — Test
- N — No Determination Possible

Sample Types -

- S - Soil/Solid
- UNS - Unspecified Solid
- GW - Ground Water
- SW - Surface Water
- LE - Land Leachate
- PL - Prepared Leachate
- PR - Process Water
- SA - Saline Water
- TE - Trade Effluent
- TS - Treated Sewage
- US - Untreated Sewage
- RE - Recreational Water
- DW - Drinking Water Non-regulatory
- UNL - Unspecified Liquid
- SL - Sludge
- G - Gas
- OTH - Other

Lab Sample No(s)			20682231			20682238			20682245			20682252			20682259			20682266			20682274
Customer Sample Reference			TPBP120			TPBP120			TPBP120			TPBP120			TPBP121			TPBP121			TPBP121
AGS Reference																					
Depth (m)			0.10 - 0.10			0.90 - 0.90			1.60 - 1.60			1.90 - 1.90			0.20 - 0.20			0.50 - 0.50			1.80 - 1.80
Container			1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB
Sample Type			S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
Metals in solid samples by OES	All	NDPs: 0 Tests: 18		X			X			X			X			X			X		
PAH by GCMS	All	NDPs: 0 Tests: 18		X			X			X			X			X			X		
PAH Spec MS - Aqueous (W)	All	NDPs: 0 Tests: 13	X			X			X						X			X			X
pH	All	NDPs: 0 Tests: 18		X			X			X			X			X			X		
pH Value	All	NDPs: 0 Tests: 13	X			X			X						X			X			X
Phenols by HPLC (S)	All	NDPs: 0 Tests: 18		X			X			X			X			X			X		
Phenols by HPLC (W)	All	NDPs: 0 Tests: 13	X			X			X						X			X			X
Sample description	All	NDPs: 0 Tests: 18		X			X			X			X			X			X		
Total Organic Carbon	All	NDPs: 0 Tests: 18		X			X			X			X			X			X		
Total Sulphate	All	NDPs: 0 Tests: 18		X			X			X			X			X			X		
Total Sulphur	All	NDPs: 0 Tests: 18		X			X			X			X			X			X		
TPH CWG (W)	All	NDPs: 0 Tests: 13	X			X			X						X			X			X
TPH CWG GC (S)	All	NDPs: 0 Tests: 18		X			X			X			X			X			X		
VOC MS (S)	All	NDPs: 0 Tests: 18			X			X			X			X			X			X	

20682295	TPBP123		1.50 - 1.50	1kg TUB	S															
20682288	TPBP123		0.50 - 0.50	60g VOC (ALE215)	S															X
				250g Amber Jar (ALE210)	S	X	X		X		X		X	X	X	X		X		
				1kg TUB	S			X		X		X					X			
20682204	TPBP123		0.20 - 0.20	60g VOC (ALE215)	S															X
				250g Amber Jar (ALE210)	S	X	X		X		X		X	X	X	X		X		
				1kg TUB	S			X		X		X					X			
20682343	TPBP122		1.80 - 1.80	60g VOC (ALE215)	S															X
				250g Amber Jar (ALE210)	S	X	X		X		X		X	X	X	X		X		
				1kg TUB	S			X		X		X					X			
20682336	TPBP122		1.00 - 1.00	60g VOC (ALE215)	S															X
				250g Amber Jar (ALE210)	S	X	X		X		X		X	X	X	X		X		
				1kg TUB	S															
20682329	TPBP122		0.20 - 0.20	60g VOC (ALE215)	S															X
				250g Amber Jar (ALE210)	S	X	X		X		X		X	X	X	X		X		
				1kg TUB	S			X		X		X					X			
20682281	TPBP121		2.00 - 2.00	60g VOC (ALE215)	S															X
				250g Amber Jar (ALE210)	S	X	X		X		X		X	X	X	X		X		
				1kg TUB	S			X		X		X					X			
20682274	TPBP121		1.80 - 1.80	60g VOC (ALE215)	S															X
				250g Amber Jar (ALE210)	S	X	X		X		X		X	X	X	X		X		

CERTIFICATE OF ANALYSIS

Validated

SDG:	190909-23	**Client Reference:**		**Report Number:**	522124
Location:	Llanwern	**Order Number:**	LLA663	**Superseded Report:**	

Results Legend

X Test

N No Determination Possible

Sample Types -

S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

Lab Sample No(s)			20682295		20682352			20682359			20682367			20682223		
Customer Sample Reference			TPBP123		TPBP144			TPBP144			TPBP144			TPBP144		
AGS Reference																
Depth (m)			1.50 - 1.50		0.10 - 0.10			0.90 - 0.90			1.40 - 1.40			1.80 - 1.80		
Container			250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)
Sample Type			S	S	S	S	S	S	S	S	S	S	S	S	S	S
Ammonium Low	All	NDPs: 0 Tests: 13			X			X								
Ammonium Soil by Titration	All	NDPs: 0 Tests: 18	X			X			X			X			X	
Anions by Kone (soil)	All	NDPs: 0 Tests: 18	X			X			X			X			X	
Asbestos ID in Solid Samples	All	NDPs: 0 Tests: 18			X			X			X			X		
CEN Readings	All	NDPs: 0 Tests: 13			X			X								
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 31	X		X	X		X	X			X			X	
Dissolved Metals by ICP-MS	All	NDPs: 0 Tests: 13			X			X								
EPH CWG (Aliphatic) Aqueous GC (W)	All	NDPs: 0 Tests: 13			X			X								
EPH CWG (Aliphatic) GC (S)	All	NDPs: 0 Tests: 18	X			X			X			X			X	
EPH CWG (Aromatic) Aqueous GC (W)	All	NDPs: 0 Tests: 13			X			X								
EPH CWG (Aromatic) GC (S)	All	NDPs: 0 Tests: 18	X			X			X			X			X	
GRO by GC-FID (S)	All	NDPs: 0 Tests: 18		X			X			X			X			X
GRO by GC-FID (W)	All	NDPs: 0 Tests: 13			X			X								
Mercury Dissolved	All	NDPs: 0 Tests: 13			X			X								
Metals in solid samples by OES	All	NDPs: 0 Tests: 18	X			X			X			X			X	

16:51:33 19/09/2019

CERTIFICATE OF ANALYSIS

SDG:	190909-23	**Client Reference:**		**Report Number:**	522124
Location:	Llanwern	**Order Number:**	LLA663	**Superseded Report:**	

Results Legend

- X — Test
- N — No Determination Possible

Sample Types -

S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

Lab Sample No(s)			20682295		20682352			20682359			20682367			20682223		
Customer Sample Reference			TPBP123		TPBP144			TPBP144			TPBP144			TPBP144		
AGS Reference																
Depth (m)			1.50 - 1.50		0.10 - 0.10			0.90 - 0.90			1.40 - 1.40			1.80 - 1.80		
Container			250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)
Sample Type			S	S	S	S	S	S	S	S	S	S	S	S	S	S
PAH by GCMS	All	NDPs: 0 Tests: 18	X			X			X			X			X	
PAH Spec MS - Aqueous (W)	All	NDPs: 0 Tests: 13			X			X								
pH	All	NDPs: 0 Tests: 18	X			X			X			X			X	
pH Value	All	NDPs: 0 Tests: 13			X			X								
Phenols by HPLC (S)	All	NDPs: 0 Tests: 18	X			X			X			X			X	
Phenols by HPLC (W)	All	NDPs: 0 Tests: 13			X			X								
Sample description	All	NDPs: 0 Tests: 18	X			X			X			X			X	
Total Organic Carbon	All	NDPs: 0 Tests: 18	X			X			X			X			X	
Total Sulphate	All	NDPs: 0 Tests: 18	X			X			X			X			X	
Total Sulphur	All	NDPs: 0 Tests: 18	X			X			X			X			X	
TPH CWG (W)	All	NDPs: 0 Tests: 13			X			X								
TPH CWG GC (S)	All	NDPs: 0 Tests: 18	X			X			X			X			X	
VOC MS (S)	All	NDPs: 0 Tests: 18		X			X			X			X			X

CERTIFICATE OF ANALYSIS

SDG:	190909-23	**Client Reference:**		**Report Number:**	522124
Location:	Llanwern	**Order Number:**	LLA663	**Superseded Report:**	

Sample Descriptions

Grain Sizes

very fine	<0.063mm	**fine**	0.063mm - 0.1mm	**medium**	0.1mm - 2mm	**coarse**	2mm - 10mm	**very coarse**	>10mm

Lab Sample No(s)	Customer Sample Ref.	Depth (m)	Colour	Description	Inclusions	Inclusions 2
20682231	TPBP120	0.10 - 0.10	Dark Brown	Loamy Sand	Crushed Brick	Concrete/Aggregate
20682238	TPBP120	0.90 - 0.90	Dark Brown	Loamy Sand	Crushed Brick	Stones
20682245	TPBP120	1.60 - 1.60	Dark Brown	Stone/Soil	Crushed Brick	Stones
20682252	TPBP120	1.90 - 1.90	Dark Brown	Sandy Loam	Stones	Vegetation
20682259	TPBP121	0.20 - 0.20	Dark Brown	Loamy Sand	Crushed Brick	Concrete/Aggregate
20682266	TPBP121	0.50 - 0.50	Dark Brown	Loamy Sand	Stones	Crushed Brick
20682274	TPBP121	1.80 - 1.80	Dark Brown	Loamy Sand	Stones	Vegetation
20682281	TPBP121	2.00 - 2.00	Dark Brown	Silty Clay Loam	Vegetation	None
20682329	TPBP122	0.20 - 0.20	Dark Brown	Sandy Loam	Crushed Brick	Stones
20682336	TPBP122	1.00 - 1.00	Dark Brown	Loamy Sand	Stones	None
20682343	TPBP122	1.80 - 1.80	Dark Brown	Sandy Loam	Stones	Vegetation
20682204	TPBP123	0.20 - 0.20	Dark Brown	Loamy Sand	Stones	Vegetation
20682288	TPBP123	0.50 - 0.50	Dark Brown	Loamy Sand	Stones	Vegetation
20682295	TPBP123	1.50 - 1.50	Dark Brown	Clay	None	None
20682223	TPBP144	1.80 - 1.80	Dark Brown	Sandy Clay	Stones	Vegetation
20682352	TPBP144	0.10 - 0.10	Dark Brown	Loamy Sand	Concrete/Aggregate	Stones
20682359	TPBP144	0.90 - 0.90	Dark Brown	Loamy Sand	Crushed Brick	Stones
20682367	TPBP144	1.40 - 1.40	Dark Brown	Concrete	Stones	None

These descriptions are only intended to act as a cross check if sample identities are questioned, and to provide a log of sample matrices with respect to MCERTS validation. They are not intended as full geological descriptions.

We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally ocurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample.

Other coarse granular materials such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

Validated

CERTIFICATE OF ANALYSIS

SDG:	190909-23	**Client Reference:**		**Report Number:**	522124
Location:	Llanwern	**Order Number:**	LLA663	**Superseded Report:**	

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-3+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	TPBP120	TPBP120	TPBP120	TPBP120	TPBP121	TPBP121
			Depth (m)	0.10 - 0.10	0.90 - 0.90	1.60 - 1.60	1.90 - 1.90	0.20 - 0.20	0.50 - 0.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	05/09/2019	05/09/2019	05/09/2019	05/09/2019	05/09/2019	05/09/2019
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	09/09/2019	09/09/2019	09/09/2019	09/09/2019	09/09/2019	09/09/2019
			SDG Ref	190909-23	190909-23	190909-23	190909-23	190909-23	190909-23
			Lab Sample No.(s)	20682231	20682238	20682245	20682252	20682259	20682266
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		7.3	7.9	13	35	4.6	5.9
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	<12 M	<12 M	184 M	<12 M	<12 M
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M
Sulphur, Total	<0.02 %	TM132		0.147	0.103	0.216	0.124	0.243	0.243
Sulphate, Total potential	<0.06 %	TM132		0.441	0.309	0.648	0.372	0.729	0.729
Soil Organic Matter (SOM)	<0.35 %	TM132		1.14 #	3.28 #	2.19 #	5.17 #	1.84 #	2.84 #
pH	1 pH Units	TM133		9.03 M	8.3 M	8.01 M	6.81 M	9.18 M	8.98 M
Cyanide, Total	<1 mg/kg	TM153		1.5 M	9.23 M	12.8 M	1.22 M	2.3 M	1.31 M
Cyanide, Free	<1 mg/kg	TM153		<1 M	<1 M	<1 M	<1 M	<1 M	<1 M
Arsenic	<0.6 mg/kg	TM181		16.1 M	14.2 M	9.69 M	14 M	19.5 M	15.9 M
Cadmium	<0.02 mg/kg	TM181		0.218 M	0.023 M	0.108 M	0.139 M	<0.02 M	<0.02 M
Chromium	<0.9 mg/kg	TM181		9.84 M	21.5 M	17.6 M	36.9 M	16.6 M	43.2 M
Copper	<1.4 mg/kg	TM181		21.5 M	29.6 M	27.8 M	16.4 M	42.8 M	46.1 M
Iron	<1000 mg/kg	TM181		18700 #	26000 #	21800 #	23800 #	71000 #	73500 #
Lead	<0.7 mg/kg	TM181		33.7 M	28.7 M	24.1 M	34.9 M	40.9 M	50.5 M
Manganese	<0.13 mg/kg	TM181		1040 M	766 M	479 M	290 M	4200 M	5490 M
Mercury	<0.14 mg/kg	TM181		<0.14 M	<0.14 M	<0.14 M	<0.14 M	<0.14 M	<0.14 M
Nickel	<0.2 mg/kg	TM181		9.51 M	34.5 M	24.7 M	25.3 M	11.5 M	16.8 M
Selenium	<1 mg/kg	TM181		<1 #	<1 #	<1 #	<1 #	<1 #	1.79 #
Vanadium	<0.2 mg/kg	TM181		20.5 #	39.2 #	31.6 #	54 #	29.8 #	60.3 #
Zinc	<1.9 mg/kg	TM181		114 M	111 M	78.5 M	121 M	109 M	234 M
Sulphate, acid soluble (total)	<0.02 %	TM221		0.32	0.0746	0.159	0.0968	0.291	0.284
Water Soluble Sulphate as SO4 2:1 Extract	<0.004 g/l	TM243		0.0948 M	0.0722 M	0.108 M	0.0369 M	0.107 M	0.113 M
Soluble Sulphate 2:1 extract as SO4 BRE	<0.004 g/l	TM243		0.0948 M	0.0722 M	0.108 M	0.0369 M	0.107 M	0.113 M

Validated

CERTIFICATE OF ANALYSIS

SDG:	190909-23	**Client Reference:**		**Report Number:**	522124
Location:	Llanwern	**Order Number:**	LLA663	**Superseded Report:**	

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-3+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	TPBP121	TPBP121	TPBP122	TPBP122	TPBP122	TPBP123
			Depth (m)	1.80 - 1.80	2.00 - 2.00	0.20 - 0.20	1.00 - 1.00	1.80 - 1.80	0.20 - 0.20
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	05/09/2019	05/09/2019	05/09/2019	05/09/2019	05/09/2019	05/09/2019
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	09/09/2019	09/09/2019	09/09/2019	09/09/2019	09/09/2019	09/09/2019
			SDG Ref	190909-23	190909-23	190909-23	190909-23	190909-23	190909-23
			Lab Sample No.(s)	20682274	20682281	20682329	20682336	20682343	20682204
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		8.3	30	7.1	13	32	6.4
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	223 M	<12 M	22.7 M	209 M	<12 M
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	0.046 M	<0.01 M	<0.01 M
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M	<0.015 M	0.023 M	<0.015 M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 M	<0.035 M	0.069 M	<0.035 M	<0.035 M
Sulphur, Total	<0.02 %	TM132		0.164	0.0488	0.246	0.478	0.0506	0.188
Sulphate, Total potential	<0.06 %	TM132		0.492	0.146	0.738	1.43	0.152	0.564
Soil Organic Matter (SOM)	<0.35 %	TM132		2.48 #	5.22 #	1.31 #	11.4 #	5.79 #	2.14 #
pH	1 pH Units	TM133		8.36 M	7.1 M	8.56 M	7.47 M	7.07 M	9.19 M
Cyanide, Total	<1 mg/kg	TM153		5.85 M	<1 M	2.06 M	2.76 M	<1 M	<1 M
Cyanide, Free	<1 mg/kg	TM153		<1 M	<1 M	<1 M	<1 M	<1 M	<1 M
Arsenic	<0.6 mg/kg	TM181		10.5 M	12.6 M	11 M	9.66 M	13.4 M	9.42 M
Cadmium	<0.02 mg/kg	TM181		0.22 M	<0.02 M	<0.02 M	0.0643 M	<0.02 M	0.0729 M
Chromium	<0.9 mg/kg	TM181		14 M	35.3 M	24.9 M	29.8 M	34.5 M	9.11 M
Copper	<1.4 mg/kg	TM181		20.4 M	14 M	19.6 M	26 M	17 M	16.7 M
Iron	<1000 mg/kg	TM181		25100 #	16800 #	31500 #	17800 #	20600 #	35600 #
Lead	<0.7 mg/kg	TM181		21.2 M	34 M	38.8 M	19.7 M	38.5 M	56 M
Manganese	<0.13 mg/kg	TM181		1190 M	274 M	3810 M	1230 M	358 M	1900 M
Mercury	<0.14 mg/kg	TM181		<0.14 M	<0.14 M	0.407 M	<0.14 M	<0.14 M	0.648 M
Nickel	<0.2 mg/kg	TM181		18.2 M	22.9 M	19.8 M	18.3 M	24.6 M	11.9 M
Selenium	<1 mg/kg	TM181		<1 #	<1 #	6.18 #	1.95 #	<1 #	<1 #
Vanadium	<0.2 mg/kg	TM181		34.2 #	49 #	31.1 #	90.1 #	49.7 #	22.4 #
Zinc	<1.9 mg/kg	TM181		85.9 M	98.1 M	87.5 M	54.8 M	115 M	82.8 M
Sulphate, acid soluble (total)	<0.02 %	TM221		0.323	0.0457	1	0.165	0.0488	0.327
Water Soluble Sulphate as SO4 2:1 Extract	<0.004 g/l	TM243		0.17 M	0.0364 M	0.193 M	0.246 M	0.0116 M	0.172 M
Soluble Sulphate 2:1 extract as SO4 BRE	<0.004 g/l	TM243		0.17 M	0.0364 M	0.193 M	0.246 M	0.0116 M	0.172 M
Asbestos Quantification - Gravimetric - %	<0.001 %	TM304		<0.001 #		0.0119 #			
Asbestos Quantification - PCOM Evaluation - %	<0.001 %	TM304		<0.001 #		<0.001 #			
Additional Asbestos Components (Using TM048)		TM304		None #		None #			
Analysts Comments		TM304		N/C		N/C			
Asbestos Quantification - Total - %	<0.001 %	TM304		<0.001 #		0.0125 #			

Validated

CERTIFICATE OF ANALYSIS

SDG:	190909-23	**Client Reference:**		**Report Number:**	522124
Location:	Llanwern	**Order Number:**	LLA663	**Superseded Report:**	

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-3+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	TPBP123	TPBP123	TPBP144	TPBP144	TPBP144	TPBP144
			Depth (m)	0.50 - 0.50	1.50 - 1.50	0.10 - 0.10	0.90 - 0.90	1.40 - 1.40	1.80 - 1.80
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	05/09/2019	05/09/2019	05/09/2019	05/09/2019	05/09/2019	05/09/2019
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	09/09/2019	09/09/2019	09/09/2019	09/09/2019	09/09/2019	09/09/2019
			SDG Ref	190909-23	190909-23	190909-23	190909-23	190909-23	190909-23
			Lab Sample No.(s)	20682288	20682295	20682352	20682359	20682367	20682223
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		8.8	24	8.6	8.9	11	25
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	227 M	<12 M	<12 M	<12 #	130 M
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 #	<0.01 M
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 #	<0.01 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 #	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 #	<0.035 M
Sulphur, Total	<0.02 %	TM132		0.115	0.035	0.151	0.085	0.174	0.0258
Sulphate, Total potential	<0.06 %	TM132		0.345	0.105	0.453	0.255	0.522	0.0774
Soil Organic Matter (SOM)	<0.35 %	TM132		2.19 #	2.17 #	1.19 #	2.05 #	1.57 #	2.53 #
pH	1 pH Units	TM133		8.91 M	7.25 M	8.91 M	8.68 M	8.19 #	8.27 M
Cyanide, Total	<1 mg/kg	TM153		<1 M	<1 M	<1 M	<1 M	1.29 #	<1 M
Cyanide, Free	<1 mg/kg	TM153		<1 M	<1 M	<1 M	<1 M	<1 #	<1 M
Arsenic	<0.6 mg/kg	TM181		8.89 M	17.1 M	14.1 M	8.02 M	7.22 #	10.7 M
Cadmium	<0.02 mg/kg	TM181		0.168 M	<0.02 M	0.021 M	<0.02 M	<0.02 #	<0.02 M
Chromium	<0.9 mg/kg	TM181		28.9 M	33.7 M	14.1 M	9.25 M	13.4 #	29.1 M
Copper	<1.4 mg/kg	TM181		31.9 M	12.4 M	15.2 M	23.2 M	29.7 #	10.5 M
Iron	<1000 mg/kg	TM181		26600 #	38800 #	34100 #	28500 #	16900 #	28200 #
Lead	<0.7 mg/kg	TM181		36.8 M	25.4 M	37.2 M	17.5 M	17.1 #	25.9 M
Manganese	<0.13 mg/kg	TM181		1220 M	745 M	2470 M	724 M	377 #	499 M
Mercury	<0.14 mg/kg	TM181		<0.14 M	<0.14 M	<0.14 M	<0.14 M	<0.14 #	<0.14 M
Nickel	<0.2 mg/kg	TM181		42 M	34.3 M	15.8 M	23.1 M	22.6 #	28.3 M
Selenium	<1 mg/kg	TM181		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
Vanadium	<0.2 mg/kg	TM181		57.8 #	55.4 #	42.3 #	27.8 #	22.3 #	45.7 #
Zinc	<1.9 mg/kg	TM181		113 M	105 M	129 M	46.8 M	38 #	98 M
Sulphate, acid soluble (total)	<0.02 %	TM221		0.272	0.0243	0.589	0.0899	0.0896	0.0521
Water Soluble Sulphate as SO4 2:1 Extract	<0.004 g/l	TM243		0.0408 M	0.113 M	0.0939 M	0.0513 M	0.148 #	0.0526 M
Soluble Sulphate 2:1 extract as SO4 BRE	<0.004 g/l	TM243		0.0408 M	0.113 M	0.0939 M	0.0513 M	0.148 #	0.0526 M

Validated

CERTIFICATE OF ANALYSIS

SDG:	190909-23	**Client Reference:**		**Report Number:**	522124
Location:	Llanwern	**Order Number:**	LLA663	**Superseded Report:**	

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-3+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	TPBP120	TPBP120	TPBP120	TPBP120	TPBP121	TPBP121
			Depth (m)	0.10 - 0.10	0.90 - 0.90	1.60 - 1.60	1.90 - 1.90	0.20 - 0.20	0.50 - 0.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	05/09/2019	05/09/2019	05/09/2019	05/09/2019	05/09/2019	05/09/2019
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	09/09/2019	09/09/2019	09/09/2019	09/09/2019	09/09/2019	09/09/2019
			SDG Ref	190909-23	190909-23	190909-23	190909-23	190909-23	190909-23
			Lab Sample No.(s)	20682231	20682238	20682245	20682252	20682259	20682266
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		87.9	90.6	90.2	108	88.9	84.2
Acenaphthene-d10 % recovery**	%	TM218		87.9	92.1	90.6	101	87.4	86.6
Phenanthrene-d10 % recovery**	%	TM218		88.2	92.6	91.8	104	89.1	84.7
Chrysene-d12 % recovery**	%	TM218		74.2	77.3	80.3	103	80.3	98.3
Perylene-d12 % recovery**	%	TM218		72.9	72.4	77.3	98.3	81	95.5
Naphthalene	<0.009 mg/kg	TM218		0.13 M	1.98 M	1.82 M	9.54 M	0.25 M	0.239 M
Acenaphthylene	<0.012 mg/kg	TM218		<0.06 M	0.0528 M	0.0381 M	0.0487 M	0.158 M	0.15 M
Acenaphthene	<0.008 mg/kg	TM218		0.0569 M	0.0784 M	0.078 M	0.0262 M	0.0829 M	0.206 M
Fluorene	<0.01 mg/kg	TM218		<0.05 M	0.0459 M	0.0457 M	0.0552 M	0.139 M	0.294 M
Phenanthrene	<0.015 mg/kg	TM218		0.264 M	0.119 M	0.0542 M	0.271 M	2.35 M	4.39 M
Anthracene	<0.016 mg/kg	TM218		<0.08 M	0.0291 M	<0.016 M	0.0752 M	0.826 M	2 M
Fluoranthene	<0.017 mg/kg	TM218		0.796 M	0.194 M	0.053 M	0.45 M	11.6 M	26.7 M
Pyrene	<0.015 mg/kg	TM218		0.656 M	0.171 M	0.0416 M	0.333 M	9.45 M	23.4 M
Benz(a)anthracene	<0.014 mg/kg	TM218		0.352 M	0.161 M	0.0249 M	0.219 M	5.65 M	17.6 M
Chrysene	<0.01 mg/kg	TM218		0.361 M	0.163 M	0.0293 M	0.249 M	5.53 M	17.1 M
Benzo(b)fluoranthene	<0.015 mg/kg	TM218		0.721 M	0.404 M	0.0394 M	0.363 M	9.95 M	27 M
Benzo(k)fluoranthene	<0.014 mg/kg	TM218		0.229 M	0.106 M	<0.014 M	0.108 M	2.66 M	8.79 M
Benzo(a)pyrene	<0.015 mg/kg	TM218		0.435 M	0.331 M	0.0206 M	0.182 M	6.04 M	16.7 M
Indeno(1,2,3-cd)pyrene	<0.018 mg/kg	TM218		0.59 M	0.439 M	0.0229 M	0.185 M	7.12 M	18 M
Dibenzo(a,h)anthracene	<0.023 mg/kg	TM218		<0.115 M	0.0714 M	<0.023 M	<0.023 M	0.724 M	2.93 M
Benzo(g,h,i)perylene	<0.024 mg/kg	TM218		0.442 M	0.345 M	<0.024 M	0.169 M	4.92 M	12.9 M
PAH, Total Detected USEPA 16	<0.118 mg/kg	TM218		5.03	4.69	2.27	12.3	67.4	178

Validated

CERTIFICATE OF ANALYSIS

SDG:	190909-23	**Client Reference:**		**Report Number:**	522124
Location:	Llanwern	**Order Number:**	LLA663	**Superseded Report:**	

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-3+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	TPBP121	TPBP121	TPBP122	TPBP122	TPBP122	TPBP123
			Depth (m)	1.80 - 1.80	2.00 - 2.00	0.20 - 0.20	1.00 - 1.00	1.80 - 1.80	0.20 - 0.20
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	05/09/2019	05/09/2019	05/09/2019	05/09/2019	05/09/2019	05/09/2019
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	09/09/2019	09/09/2019	09/09/2019	09/09/2019	09/09/2019	09/09/2019
			SDG Ref	190909-23	190909-23	190909-23	190909-23	190909-23	190909-23
			Lab Sample No.(s)	20682274	20682281	20682329	20682336	20682343	20682204
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		85.3	88	83.7	79.8	84	86.9
Acenaphthene-d10 % recovery**	%	TM218		87.7	89.8	88.3	79.7	83.7	89.2
Phenanthrene-d10 % recovery**	%	TM218		88.3	88.2	91.7	78.5	84.8	91.2
Chrysene-d12 % recovery**	%	TM218		93.1	89.3	87.5	75.9	85.5	96.3
Perylene-d12 % recovery**	%	TM218		90.8	89.4	92.2	73	91.3	92.6
Naphthalene	<0.009 mg/kg	TM218		0.366 M	<0.009 M	0.604 M	0.656 M	0.294 M	0.267 M
Acenaphthylene	<0.012 mg/kg	TM218		0.0366 M	<0.012 M	0.337 M	<0.012 M	<0.012 M	0.0485 M
Acenaphthene	<0.008 mg/kg	TM218		0.0175 M	<0.008 M	0.293 M	0.0331 M	<0.008 M	0.162 M
Fluorene	<0.01 mg/kg	TM218		0.0222 M	<0.01 M	0.0738 M	0.0243 M	<0.01 M	0.118 M
Phenanthrene	<0.015 mg/kg	TM218		0.316 M	<0.015 M	0.17 M	0.175 M	<0.015 M	1.85 M
Anthracene	<0.016 mg/kg	TM218		0.081 M	<0.016 M	0.0404 M	<0.016 M	<0.016 M	0.385 M
Fluoranthene	<0.017 mg/kg	TM218		1.17 M	0.0281 M	0.296 M	0.151 M	<0.017 M	4.08 M
Pyrene	<0.015 mg/kg	TM218		0.926 M	<0.015 M	0.258 M	0.102 M	<0.015 M	3.18 M
Benz(a)anthracene	<0.014 mg/kg	TM218		0.741 M	<0.014 M	0.156 M	0.0311 M	<0.014 M	2.03 M
Chrysene	<0.01 mg/kg	TM218		0.741 M	0.0163 M	0.151 M	0.0492 M	<0.01 M	1.89 M
Benzo(b)fluoranthene	<0.015 mg/kg	TM218		1.23 M	0.0289 M	0.379 M	0.053 M	<0.015 M	3 M
Benzo(k)fluoranthene	<0.014 mg/kg	TM218		0.434 M	<0.014 M	0.111 M	<0.014 M	<0.014 M	1.1 M
Benzo(a)pyrene	<0.015 mg/kg	TM218		0.741 M	<0.015 M	0.164 M	<0.015 M	<0.015 M	1.78 M
Indeno(1,2,3-cd)pyrene	<0.018 mg/kg	TM218		0.893 M	<0.018 M	0.192 M	<0.018 M	<0.018 M	2.08 M
Dibenzo(a,h)anthracene	<0.023 mg/kg	TM218		0.0903 M	<0.023 M	<0.023 M	<0.023 M	<0.023 M	0.348 M
Benzo(g,h,i)perylene	<0.024 mg/kg	TM218		0.607 M	<0.024 M	0.182 M	<0.024 M	<0.024 M	1.55 M
PAH, Total Detected USEPA 16	<0.118 mg/kg	TM218		8.42	<0.118	3.41	1.28	0.294	23.9

Validated

CERTIFICATE OF ANALYSIS

SDG:	190909-23	**Client Reference:**		**Report Number:**	522124
Location:	Llanwern	**Order Number:**	LLA663	**Superseded Report:**	

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-3+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	TPBP123	TPBP123	TPBP144	TPBP144	TPBP144	TPBP144
			Depth (m)	0.50 - 0.50	1.50 - 1.50	0.10 - 0.10	0.90 - 0.90	1.40 - 1.40	1.80 - 1.80
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	05/09/2019	05/09/2019	05/09/2019	05/09/2019	05/09/2019	05/09/2019
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	09/09/2019	09/09/2019	09/09/2019	09/09/2019	09/09/2019	09/09/2019
			SDG Ref	190909-23	190909-23	190909-23	190909-23	190909-23	190909-23
			Lab Sample No.(s)	20682288	20682295	20682352	20682359	20682367	20682223
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		88.5	86.2	105	81.8	91.1	83.1
Acenaphthene-d10 % recovery**	%	TM218		90.1	84.8	101	80.6	93	81.5
Phenanthrene-d10 % recovery**	%	TM218		89.8	88.1	102	81.1	94.2	82.6
Chrysene-d12 % recovery**	%	TM218		92	88.1	95.7	78.6	78.4	83.3
Perylene-d12 % recovery**	%	TM218		88.9	79.9	94.1	75.9	71.8	89.6
Naphthalene	<0.009 mg/kg	TM218		0.778 M	<0.009 M	0.443 M	0.1 M	0.568 #	0.376 M
Acenaphthylene	<0.012 mg/kg	TM218		0.0191 M	<0.012 M	0.28 M	0.0306 M	0.0164 #	<0.012 M
Acenaphthene	<0.008 mg/kg	TM218		0.0188 M	<0.008 M	0.0505 M	<0.008 M	<0.008 #	<0.008 M
Fluorene	<0.01 mg/kg	TM218		0.0188 M	<0.01 M	0.112 M	<0.01 M	0.0113 #	<0.01 M
Phenanthrene	<0.015 mg/kg	TM218		0.044 M	<0.015 M	0.887 M	0.0655 M	0.0544 #	<0.015 M
Anthracene	<0.016 mg/kg	TM218		<0.016 M	<0.016 M	0.275 M	<0.016 M	<0.016 #	<0.016 M
Fluoranthene	<0.017 mg/kg	TM218		0.0499 M	<0.017 M	1.74 M	0.1 M	0.0338 #	<0.017 M
Pyrene	<0.015 mg/kg	TM218		0.0416 M	<0.015 M	1.33 M	0.0763 M	0.0243 #	<0.015 M
Benz(a)anthracene	<0.014 mg/kg	TM218		0.0369 M	<0.014 M	1.02 M	0.0678 M	0.0163 #	<0.014 M
Chrysene	<0.01 mg/kg	TM218		0.0524 M	<0.01 M	1.08 M	0.0854 M	0.018 #	<0.01 M
Benzo(b)fluoranthene	<0.015 mg/kg	TM218		0.0806 M	<0.015 M	1.83 M	0.128 M	0.0293 #	<0.015 M
Benzo(k)fluoranthene	<0.014 mg/kg	TM218		0.0234 M	<0.014 M	0.633 M	0.0441 M	<0.014 #	<0.014 M
Benzo(a)pyrene	<0.015 mg/kg	TM218		0.0351 M	<0.015 M	0.967 M	0.0577 M	<0.015 #	<0.015 M
Indeno(1,2,3-cd)pyrene	<0.018 mg/kg	TM218		0.0651 M	<0.018 M	0.981 M	0.0733 M	<0.018 #	<0.018 M
Dibenzo(a,h)anthracene	<0.023 mg/kg	TM218		<0.023 M	<0.023 M	0.182 M	<0.023 M	<0.023 #	<0.023 M
Benzo(g,h,i)perylene	<0.024 mg/kg	TM218		0.0426 M	<0.024 M	0.899 M	0.0495 M	<0.024 #	<0.024 M
PAH, Total Detected USEPA 16	<0.118 mg/kg	TM218		1.31	<0.118	12.7	0.878	0.772	0.376

Validated

CERTIFICATE OF ANALYSIS

SDG:	190909-23	**Client Reference:**		**Report Number:**	522124
Location:	Llanwern	**Order Number:**	LLA663	**Superseded Report:**	

TPH CWG (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-3+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	TPBP120	TPBP120	TPBP120	TPBP120	TPBP121	TPBP121
			Depth (m)	0.10 - 0.10	0.90 - 0.90	1.60 - 1.60	1.90 - 1.90	0.20 - 0.20	0.50 - 0.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	05/09/2019	05/09/2019	05/09/2019	05/09/2019	05/09/2019	05/09/2019
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	09/09/2019	09/09/2019	09/09/2019	09/09/2019	09/09/2019	09/09/2019
			SDG Ref	190909-23	190909-23	190909-23	190909-23	190909-23	190909-23
			Lab Sample No.(s)	20682231	20682238	20682245	20682252	20682259	20682266
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		93.8	78.6	92.9	84.2	76	87.2
GRO TOT (Moisture Corrected)	<0.1 mg/kg	TM089		<0.2 M	0.707 M	3.11 M	37.1 M	<0.2 M	<0.2 M
Aliphatics >C5-C6	<0.01 mg/kg	TM089		<0.02	<0.02	0.038	0.143	<0.02	<0.02
Aliphatics >C6-C8	<0.01 mg/kg	TM089		<0.02	0.05	0.0736	1.07	<0.02	<0.02
Aliphatics >C8-C10	<0.01 mg/kg	TM089		<0.02	0.088	0.348	4.99	<0.02	<0.02
Aliphatics >C10-C12	<0.01 mg/kg	TM089		<0.02	0.237	1.26	15.6	<0.02	<0.02
Aliphatics >C12-C16	<0.1 mg/kg	TM173		0.659	2.28	4.2	<0.1	1.49	1.53
Aliphatics >C16-C21	<0.1 mg/kg	TM173		3.38	3.3	4.07	<0.1	3.92	8.18
Aliphatics >C21-C35	<0.1 mg/kg	TM173		19.3	4.78	3.55	<0.1	36.3	119
Aliphatics >C35-C44	<0.1 mg/kg	TM173		7.17	1.1	0.969	<0.1	20.2	27.7
Total Aliphatics >C12-C44	<0.1 mg/kg	TM173		30.5	11.5	12.8	<0.1	61.9	157
Aromatics >EC5-EC7	<0.01 mg/kg	TM089		<0.02	0.0815	0.258	1.54	<0.02	<0.02
Aromatics >EC7-EC8	<0.01 mg/kg	TM089		<0.02	0.0239	0.0621	<0.02	<0.02	<0.02
Aromatics >EC8-EC10	<0.01 mg/kg	TM089		<0.02	0.0586	0.232	3.33	<0.02	<0.02
Aromatics >EC10-EC12	<0.01 mg/kg	TM089		<0.02	0.157	0.838	10.4	<0.02	<0.02
Aromatics >EC12-EC16	<0.1 mg/kg	TM173		0.603	4.38	6.21	0.322	1.5	2.23
Aromatics >EC16-EC21	<0.1 mg/kg	TM173		2.61	7.38	11.3	0.242	23.3	60.9
Aromatics >EC21-EC35	<0.1 mg/kg	TM173		14.4	12.3	13.9	11.4	116	241
Aromatics >EC35-EC44	<0.1 mg/kg	TM173		10.4	2.9	1.55	1.07	64	99.8
Aromatics >EC40-EC44	<0.1 mg/kg	TM173		4.36	0.779	0.366	<0.1	26.8	37.5
Total Aromatics >EC12-EC44	<0.1 mg/kg	TM173		28	26.9	33	13	205	404
Total Aliphatics & Aromatics >C5-C44	<0.1 mg/kg	TM173		58.6	39.1	48.9	50.1	267	561

Validated

CERTIFICATE OF ANALYSIS

SDG:	190909-23	**Client Reference:**		**Report Number:**	522124
Location:	Llanwern	**Order Number:**	LLA663	**Superseded Report:**	

TPH CWG (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-3+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	TPBP121	TPBP121	TPBP122	TPBP122	TPBP122	TPBP123
			Depth (m)	1.80 - 1.80	2.00 - 2.00	0.20 - 0.20	1.00 - 1.00	1.80 - 1.80	0.20 - 0.20
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	05/09/2019	05/09/2019	05/09/2019	05/09/2019	05/09/2019	05/09/2019
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	09/09/2019	09/09/2019	09/09/2019	09/09/2019	09/09/2019	09/09/2019
			SDG Ref	190909-23	190909-23	190909-23	190909-23	190909-23	190909-23
			Lab Sample No.(s)	20682274	20682281	20682329	20682336	20682343	20682204
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		89.7	90.9	85.5	76.1	85	88.7
GRO TOT (Moisture Corrected)	<0.1 mg/kg	TM089		<0.2 M	<0.2 M	<0.2 M	27.9 M	9.13 M	<0.2 M
Aliphatics >C5-C6	<0.01 mg/kg	TM089		<0.02	<0.02	<0.02	0.265	0.0474	<0.02
Aliphatics >C6-C8	<0.01 mg/kg	TM089		<0.02	<0.02	<0.02	0.842	0.235	<0.02
Aliphatics >C8-C10	<0.01 mg/kg	TM089		0.0305	<0.02	<0.02	1.45	0.855	<0.02
Aliphatics >C10-C12	<0.01 mg/kg	TM089		0.0393	<0.02	<0.02	7	3.63	<0.02
Aliphatics >C12-C16	<0.1 mg/kg	TM173		<0.1	<0.1	11.8	6.5	<0.1	1.51
Aliphatics >C16-C21	<0.1 mg/kg	TM173		2.22	<0.1	32.1	14.6	<0.1	9.35
Aliphatics >C21-C35	<0.1 mg/kg	TM173		28.1	0.454	33.3	41.9	3.83	35.7
Aliphatics >C35-C44	<0.1 mg/kg	TM173		5.49	<0.1	4.45	9.1	<0.1	7.56
Total Aliphatics >C12-C44	<0.1 mg/kg	TM173		35.8	0.454	81.6	72.1	3.83	54.1
Aromatics >EC5-EC7	<0.01 mg/kg	TM089		0.0349	<0.02	<0.02	12.6	1.38	<0.02
Aromatics >EC7-EC8	<0.01 mg/kg	TM089		<0.02	<0.02	<0.02	0.163	<0.02	<0.02
Aromatics >EC8-EC10	<0.01 mg/kg	TM089		0.0207	<0.02	<0.02	0.964	0.57	<0.02
Aromatics >EC10-EC12	<0.01 mg/kg	TM089		0.0262	<0.02	<0.02	4.67	2.42	<0.02
Aromatics >EC12-EC16	<0.1 mg/kg	TM173		3.03	<0.1	5.28	6	0.133	10.3
Aromatics >EC16-EC21	<0.1 mg/kg	TM173		7.63	0.605	18	11.7	0.447	180
Aromatics >EC21-EC35	<0.1 mg/kg	TM173		31.4	25.8	67.2	25	21	299
Aromatics >EC35-EC44	<0.1 mg/kg	TM173		10.3	3	14	7.1	2.81	80.7
Aromatics >EC40-EC44	<0.1 mg/kg	TM173		3.29	0.356	4.81	3.06	0.555	26.4
Total Aromatics >EC12-EC44	<0.1 mg/kg	TM173		52.3	29.4	104	49.8	24.4	570
Total Aliphatics & Aromatics >C5-C44	<0.1 mg/kg	TM173		88.3	29.8	186	150	37.3	624

CERTIFICATE OF ANALYSIS

SDG:	190909-23	**Client Reference:**		**Report Number:**	522124
Location:	Llanwern	**Order Number:**	LLA663	**Superseded Report:**	

TPH CWG (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-3+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	TPBP123	TPBP123	TPBP144	TPBP144	TPBP144	TPBP144
			Depth (m)	0.50 - 0.50	1.50 - 1.50	0.10 - 0.10	0.90 - 0.90	1.40 - 1.40	1.80 - 1.80
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	05/09/2019	05/09/2019	05/09/2019	05/09/2019	05/09/2019	05/09/2019
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	09/09/2019	09/09/2019	09/09/2019	09/09/2019	09/09/2019	09/09/2019
			SDG Ref	190909-23	190909-23	190909-23	190909-23	190909-23	190909-23
			Lab Sample No.(s)	20682288	20682295	20682352	20682359	20682367	20682223
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		99.3	93.2	95	107	90	95
GRO TOT (Moisture Corrected)	<0.1 mg/kg	TM089		<0.2 M	<0.2 M	<0.2 M	<0.2 M	1.05 #	13.5 M
Aliphatics >C5-C6	<0.01 mg/kg	TM089		<0.02	<0.02	<0.02	<0.02	<0.02	0.0871
Aliphatics >C6-C8	<0.01 mg/kg	TM089		<0.02	<0.02	<0.02	<0.02	0.0246	0.434
Aliphatics >C8-C10	<0.01 mg/kg	TM089		<0.02	<0.02	<0.02	0.0307	0.0784	1.03
Aliphatics >C10-C12	<0.01 mg/kg	TM089		0.0362	<0.02	<0.02	0.0746	0.469	6.59
Aliphatics >C12-C16	<0.1 mg/kg	TM173		<0.1	0.179	0.11	<0.1	<0.1	0.311
Aliphatics >C16-C21	<0.1 mg/kg	TM173		<0.1	0.536	0.802	<0.1	<0.1	0.955
Aliphatics >C21-C35	<0.1 mg/kg	TM173		5.59	2.88	11.9	<0.1	<0.1	4.96
Aliphatics >C35-C44	<0.1 mg/kg	TM173		1.93	0.973	3.69	<0.1	<0.1	0.969
Total Aliphatics >C12-C44	<0.1 mg/kg	TM173		7.52	4.57	16.5	<0.1	<0.1	7.19
Aromatics >EC5-EC7	<0.01 mg/kg	TM089		<0.02	<0.02	<0.02	<0.02	0.0818	0.233
Aromatics >EC7-EC8	<0.01 mg/kg	TM089		<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Aromatics >EC8-EC10	<0.01 mg/kg	TM089		<0.02	<0.02	<0.02	0.0208	0.0526	0.683
Aromatics >EC10-EC12	<0.01 mg/kg	TM089		0.0241	<0.02	<0.02	0.0494	0.312	4.4
Aromatics >EC12-EC16	<0.1 mg/kg	TM173		1.14	<0.1	0.942	<0.1	1.6	<0.1
Aromatics >EC16-EC21	<0.1 mg/kg	TM173		2.52	0.506	6.35	2.55	3.37	0.87
Aromatics >EC21-EC35	<0.1 mg/kg	TM173		9.6	7.15	32.8	18	8.23	16.3
Aromatics >EC35-EC44	<0.1 mg/kg	TM173		5.72	1.17	18.7	3.95	1.15	2.12
Aromatics >EC40-EC44	<0.1 mg/kg	TM173		1.97	0.199	7.29	1.51	0.289	0.411
Total Aromatics >EC12-EC44	<0.1 mg/kg	TM173		19	8.82	58.8	24.5	14.3	19.2
Total Aliphatics & Aromatics >C5-C44	<0.1 mg/kg	TM173		26.6	13.4	75.3	24.7	15.4	39.9

Validated

CERTIFICATE OF ANALYSIS

SDG:	190909-23	**Client Reference:**		**Report Number:**	522124
Location:	Llanwern	**Order Number:**	LLA663	**Superseded Report:**	

VOC MS (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-3+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	TPBP120	TPBP120	TPBP120	TPBP120	TPBP121	TPBP121
			Depth (m)	0.10 - 0.10	0.90 - 0.90	1.60 - 1.60	1.90 - 1.90	0.20 - 0.20	0.50 - 0.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	05/09/2019	05/09/2019	05/09/2019	05/09/2019	05/09/2019	05/09/2019
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	09/09/2019	09/09/2019	09/09/2019	09/09/2019	09/09/2019	09/09/2019
			SDG Ref	190909-23	190909-23	190909-23	190909-23	190909-23	190909-23
			Lab Sample No.(s)	20682231	20682238	20682245	20682252	20682259	20682266
			AGS Reference						
Dibromofluoromethane**	%	TM116		106	108	112	107	99.7	102
Toluene-d8**	%	TM116		97.4	98.3	97.5	96.3	98.1	96
4-Bromofluorobenzene**	%	TM116		95	91.3	94.8	93.5	89.6	92.2
Methyl Tertiary Butyl Ether	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M
Benzene	<0.009 mg/kg	TM116		<0.09 M	0.632 M	0.428 M	1.52 M	<0.09 M	<0.09 M
Toluene	<0.007 mg/kg	TM116		<0.07 M	0.145 M	0.0976 M	<0.07 M	<0.07 M	<0.07 M
Ethylbenzene	<0.004 mg/kg	TM116		<0.04 M	<0.04 M	<0.04 M	0.154 M	<0.04 M	<0.04 M
p/m-Xylene	<0.01 mg/kg	TM116		<0.1 #	<0.1 #	<0.1 #	1.25 #	<0.1 #	<0.1 #
o-Xylene	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M
Naphthalene	<0.013 mg/kg	TM116		<0.13 M	0.224 M	0.361 M	9.72 M	<0.13 M	<0.13 M
Sum of Detected Xylenes	<0.02 mg/kg	TM116		<0.2	<0.2	<0.2	1.25	<0.2	<0.2
Sum of BTEX	<0.04 mg/kg	TM116		<0.4	0.777	0.525	2.92	<0.4	<0.4

Validated

CERTIFICATE OF ANALYSIS

SDG:	190909-23	**Client Reference:**		**Report Number:**	522124
Location:	Llanwern	**Order Number:**	LLA663	**Superseded Report:**	

VOC MS (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-3+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	TPBP121	TPBP121	TPBP122	TPBP122	TPBP122	TPBP123
			Depth (m)	1.80 - 1.80	2.00 - 2.00	0.20 - 0.20	1.00 - 1.00	1.80 - 1.80	0.20 - 0.20
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	05/09/2019	05/09/2019	05/09/2019	05/09/2019	05/09/2019	05/09/2019
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	09/09/2019	09/09/2019	09/09/2019	09/09/2019	09/09/2019	09/09/2019
			SDG Ref	190909-23	190909-23	190909-23	190909-23	190909-23	190909-23
			Lab Sample No.(s)	20682274	20682281	20682329	20682336	20682343	20682204
			AGS Reference						
Dibromofluoromethane**	%	TM116		104	103	105	108	107	104
Toluene-d8**	%	TM116		97.2	98.9	97.9	95.6	95.8	98.2
4-Bromofluorobenzene**	%	TM116		91.5	95.7	93.9	86.8	94.1	95.4
Methyl Tertiary Butyl Ether	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M
Benzene	<0.009 mg/kg	TM116		0.142 M	<0.09 M	<0.09 M	8.57 M	2.24 M	<0.09 M
Toluene	<0.007 mg/kg	TM116		<0.07 M	<0.07 M	<0.07 M	0.37 M	<0.07 M	<0.07 M
Ethylbenzene	<0.004 mg/kg	TM116		<0.04 M	<0.04 M	<0.04 M	0.297 M	0.085 M	<0.04 M
p/m-Xylene	<0.01 mg/kg	TM116		<0.1 #	<0.1 #	<0.1 #	0.402 #	0.329 #	<0.1 #
o-Xylene	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 M	0.129 M	0.211 M	<0.1 M
Naphthalene	<0.013 mg/kg	TM116		<0.13 M	<0.13 M	<0.13 M	0.306 M	0.212 M	0.165 M
Sum of Detected Xylenes	<0.02 mg/kg	TM116		<0.2	<0.2	<0.2	0.532	0.54	<0.2
Sum of BTEX	<0.04 mg/kg	TM116		<0.4	<0.4	<0.4	9.77	2.87	<0.4

CERTIFICATE OF ANALYSIS

SDG:	190909-23	**Client Reference:**		**Report Number:**	522124
Location:	Llanwern	**Order Number:**	LLA663	**Superseded Report:**	

VOC MS (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-3+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	TPBP123	TPBP123	TPBP144	TPBP144	TPBP144	TPBP144
			Depth (m)	0.50 - 0.50	1.50 - 1.50	0.10 - 0.10	0.90 - 0.90	1.40 - 1.40	1.80 - 1.80
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	05/09/2019	05/09/2019	05/09/2019	05/09/2019	05/09/2019	05/09/2019
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	09/09/2019	09/09/2019	09/09/2019	09/09/2019	09/09/2019	09/09/2019
			SDG Ref	190909-23	190909-23	190909-23	190909-23	190909-23	190909-23
			Lab Sample No.(s)	20682288	20682295	20682352	20682359	20682367	20682223
			AGS Reference						
Dibromofluoromethane**	%	TM116		107	104	107	105	112	104
Toluene-d8**	%	TM116		98	99.3	97.9	98.9	96.9	97.8
4-Bromofluorobenzene**	%	TM116		91.5	97.2	89.6	93.8	92.8	94.9
Methyl Tertiary Butyl Ether	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 #	<0.1 M
Benzene	<0.009 mg/kg	TM116		0.17 M	<0.09 M	<0.09 M	<0.09 M	0.215 #	0.3 M
Toluene	<0.007 mg/kg	TM116		<0.07 M	<0.07 M	<0.07 M	<0.07 M	<0.07 #	<0.07 M
Ethylbenzene	<0.004 mg/kg	TM116		<0.04 M	<0.04 M	<0.04 M	<0.04 M	<0.04 #	0.0888 M
p/m-Xylene	<0.01 mg/kg	TM116		<0.1 #	<0.1 #	<0.1 #	<0.1 #	<0.1 #	<0.1 #
o-Xylene	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 #	<0.1 M
Naphthalene	<0.013 mg/kg	TM116		2.05 M	<0.13 M	<0.13 M	<0.13 M	<0.13 #	0.651 M
Sum of Detected Xylenes	<0.02 mg/kg	TM116		<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Sum of BTEX	<0.04 mg/kg	TM116		<0.4	<0.4	<0.4	<0.4	<0.4	<0.4

CERTIFICATE OF ANALYSIS

SDG:	190909-23	**Client Reference:**		**Report Number:**	522124
Location:	Llanwern	**Order Number:**	LLA663	**Superseded Report:**	

Asbestos Identification - Solid Samples

Results Legend

#	ISO17025 accredited.
M	*m*CERTS accredited.
*	Subcontracted test.
(F)	Trigger breach confirmed
1-5&♦§@	Sample deviation (see appendix)

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthophyllite	Fibrous Tremolite	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	TPBP120 0.10 - 0.10 SOLID 05/09/2019 00:00:00 09/09/2019 13:33:00 190909-23 20682231 TM048	13/09/2019	James Richards	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	TPBP120 0.90 - 0.90 SOLID 05/09/2019 00:00:00 09/09/2019 13:33:00 190909-23 20682238 TM048	13/09/2019	Agnieszka Chelmowska	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	TPBP120 1.60 - 1.60 SOLID 05/09/2019 00:00:00 09/09/2019 13:33:00 190909-23 20682245 TM048	13/09/2019	Marcin Magdziarek	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	TPBP120 1.90 - 1.90 SOLID 05/09/2019 00:00:00 09/09/2019 13:33:00 190909-23 20682252 TM048	13/09/2019	James Richards	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	TPBP121 0.20 - 0.20 SOLID 05/09/2019 00:00:00 09/09/2019 13:33:00 190909-23 20682259 TM048	13/09/2019	Agnieszka Chelmowska	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	TPBP121 0.50 - 0.50 SOLID 05/09/2019 00:00:00 09/09/2019 13:33:00 190909-23 20682266 TM048	13/09/2019	Agnieszka Chelmowska	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	TPBP121 1.80 - 1.80 SOLID 05/09/2019 00:00:00 09/09/2019 13:33:00 190909-23 20682274 TM048	13/09/2019	Marcin Magdziarek	Loose fibres in soil	Not Detected (#)	Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	TPBP121 2.00 - 2.00 SOLID 05/09/2019 00:00:00 09/09/2019 13:33:00 190909-23 20682281 TM048	13/09/2019	Marcin Magdziarek	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected

CERTIFICATE OF ANALYSIS

SDG: 190909-23 **Client Reference:** **Report Number:** 522124
Location: Llanwern **Order Number:** LLA663 **Superseded Report:**

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthophyllite	Fibrous Tremolite	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	TPBP122 0.20 - 0.20 SOLID 05/09/2019 00:00:00 09/09/2019 13:33:00 190909-23 20682329 TM048	13/09/2019	Marcin Magdziarek	Loose fibres in soil	Not Detected (#)	Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	TPBP122 1.00 - 1.00 SOLID 05/09/2019 00:00:00 09/09/2019 13:33:00 190909-23 20682336 TM048	16/09/19	Christian Hallam	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	TPBP122 1.80 - 1.80 SOLID 05/09/2019 00:00:00 09/09/2019 13:33:00 190909-23 20682343 TM048	16/09/19	Christian Hallam	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	TPBP123 0.20 - 0.20 SOLID 05/09/2019 00:00:00 09/09/2019 13:33:00 190909-23 20682204 TM048	13/09/2019	James Richards	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	TPBP123 0.50 - 0.50 SOLID 05/09/2019 00:00:00 09/09/2019 13:33:00 190909-23 20682288 TM048	13/09/19	Christian Hallam	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	TPBP123 1.50 - 1.50 SOLID 05/09/2019 00:00:00 09/09/2019 13:33:00 190909-23 20682295 TM048	13/09/2019	James Richards	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	TPBP144 0.10 - 0.10 SOLID 05/09/2019 00:00:00 09/09/2019 13:33:00 190909-23 20682352 TM048	13/09/2019	James Richards	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	TPBP144 0.90 - 0.90 SOLID 05/09/2019 00:00:00 09/09/2019 13:33:00 190909-23 20682359 TM048	13/09/2019	James Richards	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	TPBP144 1.40 - 1.40 SOLID 05/09/2019 00:00:00 09/09/2019 13:33:00 190909-23 20682367 TM048	13/09/2019	James Richards	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected

CERTIFICATE OF ANALYSIS

SDG: 190909-23 **Client Reference:** **Report Number:** 522124
Location: Llanwern **Order Number:** LLA663 **Superseded Report:**

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthophyllite	Fibrous Tremolite	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	TPBP144 1.80 - 1.80 SOLID 05/09/2019 00:00:00 09/09/2019 13:33:00 190909-23 20682223 TM048	16/09/19	Christian Hallam	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected

Asbestos Quantification - Full

Results Legend

#	ISO17025 accredited.
M	*m*CERTS accredited.
*	Subcontracted test.
(F)	Trigger breach confirmed
1-5&+$@	Sample deviation (see appendix)

		Additional Asbestos Components	Analysts Comments	Asbestos Quantification - Gravimetric - %	Asbestos Quantification - PCOM	Asbestos Quantification - Total - %
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	TPBP121 1.80 - 1.80 SOLID 05/09/2019 00:00:00 09/09/2019 13:33:00 190909-23 20682274 TM304	None (#)	N/C	<0.001 (#)	<0.001 (#)	<0.001 (#)
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	TPBP122 0.20 - 0.20 SOLID 05/09/2019 00:00:00 09/09/2019 13:33:00 190909-23 20682329 TM304	None (#)	N/C	0.0119 (#)	<0.001 (#)	0.0125 (#)

CERTIFICATE OF ANALYSIS

SDG:	190909-23	**Client Reference:**		**Report Number:**	522124
Location:	Llanwern	**Order Number:**	LLA663	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.096	**Natural Moisture Content (%)**	6.84
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	93.6
Particle Size <4mm	>95%		

Case	
SDG	190909-23
Lab Sample Number(s)	20682204
Sampled Date	05-Sep-2019
Customer Sample Ref.	TPBP123
Depth (m)	0.20 - 0.20

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Mercury Dissolved (CVAF)	0.0000765	<0.00001	0.000765	<0.0001	-	-	-
Ammoniacal Nitrogen as N	0.0126	<0.01	0.126	<0.1	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00822	<0.0005	0.0822	<0.005	-	-	-
Free Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Phenol by HPLC (W)	<0.002	<0.002	<0.02	<0.02	-	-	-
Cresols by HPLC (W)	<0.006	<0.006	<0.06	<0.06	-	-	-
Xylenols by HPLC (W)	<0.008	<0.008	<0.08	<0.08	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Total Monohydric Phenols (W)	<0.016	<0.016	<0.16	<0.16	-	-	-
Chromium	0.00221	<0.001	0.0221	<0.01	-	-	-
Copper	0.0021	<0.0003	0.021	<0.003	-	-	-
Lead	0.000931	<0.0002	0.00931	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.000426	<0.0004	0.00426	<0.004	-	-	-
Selenium	0.00166	<0.001	0.0166	<0.01	-	-	-
Vanadium	0.0222	<0.001	0.222	<0.01	-	-	-
Zinc	0.00451	<0.001	0.0451	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.677	<0.019	6.77	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000235	<0.00001	0.000235	<0.0001	-	-	-
Acenaphthene by GCMS	0.00000534	<0.000005	0.0000534	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000298	<0.000005	0.000298	<0.00005	-	-	-
Anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000208	<0.000005	0.000208	<0.00005	-	-	-
Fluorene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.0000207	<0.000005	0.000207	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.0000194	<0.000005	0.000194	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.00000827	<0.000005	0.0000827	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.0000089	<0.000002	0.000089	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	0.00000629	<0.000005	0.0000629	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	0.000015	<0.000005	0.00015	<0.00005	-	-	-

Leach Test Information

Date Prepared	11-Sep-2019
pH (pH Units)	9.24
Conductivity (µS/cm)	93.10
Temperature (°C)	16.40
Volume Leachant (Litres)	0.894

Mcerts Certification does not apply to leachates
19/09/2019 16:52:30

16:51:33 19/09/2019

CERTIFICATE OF ANALYSIS

SDG:	190909-23	**Client Reference:**		**Report Number:**	522124
Location:	Llanwern	**Order Number:**	LLA663	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.096	**Natural Moisture Content (%)**	6.84
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	93.6
Particle Size <4mm	>95%		

Case	
SDG	190909-23
Lab Sample Number(s)	20682204
Sampled Date	05-Sep-2019
Customer Sample Ref.	TPBP123
Depth (m)	0.20 - 0.20

Eluate Analysis	**C_2** Concⁿ in 10:1 eluate (mg/l)		**A_2** 10:1 concⁿ leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
PAH Spec MS - Aqueous (W)							
PAH 16 EPA Total by GCMS	0.000158	<0.000082	0.00158	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	0.015	<0.01	0.15	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	11-Sep-2019
pH (pH Units)	9.24
Conductivity (µS/cm)	93.10
Temperature (°C)	16.40
Volume Leachant (Litres)	0.894

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	190909-23	**Client Reference:**		**Report Number:**	522124
Location:	Llanwern	**Order Number:**	LLA663	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.097	**Natural Moisture Content (%)**	7.87
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	92.7
Particle Size <4mm	>95%		

Case	
SDG	190909-23
Lab Sample Number(s)	20682231
Sampled Date	05-Sep-2019
Customer Sample Ref.	TPBP120
Depth (m)	0.10 - 0.10

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Mercury Dissolved (CVAF)	0.0000491	<0.00001	0.000491	<0.0001	-	-	-
Ammoniacal Nitrogen as N	0.0209	<0.01	0.209	<0.1	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.0133	<0.0005	0.133	<0.005	-	-	-
Free Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Phenol by HPLC (W)	<0.002	<0.002	<0.02	<0.02	-	-	-
Cresols by HPLC (W)	<0.006	<0.006	<0.06	<0.06	-	-	-
Xylenols by HPLC (W)	<0.008	<0.008	<0.08	<0.08	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Total Monohydric Phenols (W)	<0.016	<0.016	<0.16	<0.16	-	-	-
Chromium	0.00222	<0.001	0.0222	<0.01	-	-	-
Copper	0.00384	<0.0003	0.0384	<0.003	-	-	-
Lead	0.00621	<0.0002	0.0621	<0.002	-	-	-
Manganese	0.00701	<0.003	0.0701	<0.03	-	-	-
Nickel	0.000757	<0.0004	0.00757	<0.004	-	-	-
Selenium	0.00163	<0.001	0.0163	<0.01	-	-	-
Vanadium	0.0177	<0.001	0.177	<0.01	-	-	-
Zinc	0.00337	<0.001	0.0337	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.171	<0.019	1.71	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Acenaphthene by GCMS	0.00000547	<0.000005	0.0000547	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000253	<0.000005	0.000253	<0.00005	-	-	-
Anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000281	<0.000005	0.000281	<0.00005	-	-	-
Fluorene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.0000155	<0.000005	0.000155	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.0000102	<0.000005	0.000102	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.0000042	<0.000002	0.000042	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-

Leach Test Information

Date Prepared	11-Sep-2019
pH (pH Units)	9.27
Conductivity (µS/cm)	112.00
Temperature (°C)	21.00
Volume Leachant (Litres)	0.893

Mcerts Certification does not apply to leachates
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CERTIFICATE OF ANALYSIS

SDG:	190909-23	**Client Reference:**		**Report Number:**	522124
Location:	Llanwern	**Order Number:**	LLA663	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.097	**Natural Moisture Content (%)**	7.87
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	92.7
Particle Size <4mm	>95%		

Case	
SDG	190909-23
Lab Sample Number(s)	20682231
Sampled Date	05-Sep-2019
Customer Sample Ref.	TPBP120
Depth (m)	0.10 - 0.10

Eluate Analysis	**C_2** Concⁿ in 10:1 eluate (mg/l)		**A_2** 10:1 concⁿ leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
PAH Spec MS - Aqueous (W)							
PAH 16 EPA Total by GCMS	0.0000888	<0.000082	0.000888	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	11-Sep-2019
pH (pH Units)	9.27
Conductivity (µS/cm)	112.00
Temperature (°C)	21.00
Volume Leachant (Litres)	0.893

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	190909-23	**Client Reference:**		**Report Number:**	522124
Location:	Llanwern	**Order Number:**	LLA663	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.098	**Natural Moisture Content (%)**	8.58
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	92.1
Particle Size <4mm	>95%		

Case	
SDG	190909-23
Lab Sample Number(s)	20682238
Sampled Date	05-Sep-2019
Customer Sample Ref.	TPBP120
Depth (m)	0.90 - 0.90

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Ammoniacal Nitrogen as N	0.0207	<0.01	0.207	<0.1	-	-	-
Total Cyanide (W)	0.14	<0.05	1.4	<0.5	-	-	-
Arsenic	0.00238	<0.0005	0.0238	<0.005	-	-	-
Free Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Phenol by HPLC (W)	<0.002	<0.002	<0.02	<0.02	-	-	-
Cresols by HPLC (W)	<0.006	<0.006	<0.06	<0.06	-	-	-
Xylenols by HPLC (W)	<0.008	<0.008	<0.08	<0.08	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Total Monohydric Phenols (W)	<0.016	<0.016	<0.16	<0.16	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.00179	<0.0003	0.0179	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.000811	<0.0004	0.00811	<0.004	-	-	-
Selenium	0.00292	<0.001	0.0292	<0.01	-	-	-
Vanadium	0.00434	<0.001	0.0434	<0.01	-	-	-
Zinc	0.00121	<0.001	0.0121	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.588	<0.019	5.88	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Acenaphthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.000121	<0.000005	0.00121	<0.00005	-	-	-
Anthracene by GCMS	0.0000124	<0.000005	0.000124	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000638	<0.000005	0.000638	<0.00005	-	-	-
Fluorene by GCMS	0.00000793	<0.000005	0.0000793	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.0000623	<0.000005	0.000623	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-

Leach Test Information

Date Prepared	11-Sep-2019
pH (pH Units)	8.49
Conductivity (µS/cm)	147.00
Temperature (°C)	20.60
Volume Leachant (Litres)	0.892

Mcerts Certification does not apply to leachates
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CERTIFICATE OF ANALYSIS

SDG:	190909-23	**Client Reference:**		**Report Number:**	522124
Location:	Llanwern	**Order Number:**	LLA663	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.098	**Natural Moisture Content (%)**	8.58
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	92.1
Particle Size <4mm	>95%		

Case	
SDG	190909-23
Lab Sample Number(s)	20682238
Sampled Date	05-Sep-2019
Customer Sample Ref.	TPBP120
Depth (m)	0.90 - 0.90

Eluate Analysis	**C_2** Concⁿ in 10:1 eluate (mg/l)		**A_2** 10:1 concⁿ leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
PAH Spec MS - Aqueous (W)							
PAH 16 EPA Total by GCMS	0.000267	<0.000082	0.00267	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	11-Sep-2019
pH (pH Units)	8.49
Conductivity (µS/cm)	147.00
Temperature (°C)	20.60
Volume Leachant (Litres)	0.892

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	190909-23	**Client Reference:**		**Report Number:**	522124
Location:	Llanwern	**Order Number:**	LLA663	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.104	**Natural Moisture Content (%)**	14.9
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	87
Particle Size <4mm	>95%		

Case	
SDG	190909-23
Lab Sample Number(s)	20682245
Sampled Date	05-Sep-2019
Customer Sample Ref.	TPBP120
Depth (m)	1.60 - 1.60

Eluate Analysis	**C_2** Concⁿ in 10:1 eluate (mg/l)		**A_2** 10:1 concⁿ leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Ammoniacal Nitrogen as N	0.166	<0.01	1.66	<0.1	-	-	-
Total Cyanide (W)	0.08	<0.05	0.8	<0.5	-	-	-
Arsenic	0.0014	<0.0005	0.014	<0.005	-	-	-
Free Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Phenol by HPLC (W)	<0.002	<0.002	<0.02	<0.02	-	-	-
Cresols by HPLC (W)	<0.006	<0.006	<0.06	<0.06	-	-	-
Xylenols by HPLC (W)	<0.008	<0.008	<0.08	<0.08	-	-	-
Cadmium	0.0000804	<0.00008	0.000804	<0.0008	-	-	-
Total Monohydric Phenols (W)	<0.016	<0.016	<0.16	<0.16	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.00126	<0.0003	0.0126	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	0.229	<0.003	2.29	<0.03	-	-	-
Nickel	0.00144	<0.0004	0.0144	<0.004	-	-	-
Selenium	0.00118	<0.001	0.0118	<0.01	-	-	-
Vanadium	0.00153	<0.001	0.0153	<0.01	-	-	-
Zinc	0.00229	<0.001	0.0229	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.384	<0.019	3.84	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000859	<0.00001	0.000859	<0.0001	-	-	-
Acenaphthene by GCMS	0.0000419	<0.000005	0.000419	<0.00005	-	-	-
Acenaphthylene by GCMS	0.0000203	<0.000005	0.000203	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000337	<0.000005	0.000337	<0.00005	-	-	-
Anthracene by GCMS	0.0000239	<0.000005	0.000239	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000715	<0.000005	0.000715	<0.00005	-	-	-
Fluorene by GCMS	0.0000215	<0.000005	0.000215	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.0000208	<0.000005	0.000208	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-

Leach Test Information

Date Prepared	11-Sep-2019
pH (pH Units)	7.45
Conductivity (µS/cm)	189.00
Temperature (°C)	17.30
Volume Leachant (Litres)	0.887

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	190909-23	**Client Reference:**		**Report Number:**	522124
Location:	Llanwern	**Order Number:**	LLA663	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.104	**Natural Moisture Content (%)**	14.9
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	87
Particle Size <4mm	>95%		

Case	
SDG	190909-23
Lab Sample Number(s)	20682245
Sampled Date	05-Sep-2019
Customer Sample Ref.	TPBP120
Depth (m)	1.60 - 1.60

Eluate Analysis	**C_2** Concⁿ in 10:1 eluate (mg/l)		**A_2** 10:1 concⁿ leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
PAH Spec MS - Aqueous (W)							
PAH 16 EPA Total by GCMS	0.00032	<0.000082	0.0032	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	0.05	<0.05	0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	0.016	<0.01	0.16	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	0.011	<0.01	0.11	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	0.023	<0.01	0.23	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	0.023	<0.01	0.23	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	0.073	<0.01	0.73	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	11-Sep-2019
pH (pH Units)	7.45
Conductivity (µS/cm)	189.00
Temperature (°C)	17.30
Volume Leachant (Litres)	0.887

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	190909-23	**Client Reference:**		**Report Number:**	522124
Location:	Llanwern	**Order Number:**	LLA663	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.094	**Natural Moisture Content (%)**	4.82
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	95.4
Particle Size <4mm	>95%		

Case	
SDG	190909-23
Lab Sample Number(s)	20682259
Sampled Date	05-Sep-2019
Customer Sample Ref.	TPBP121
Depth (m)	0.20 - 0.20

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Mercury Dissolved (CVAF)	0.0000487	<0.00001	0.000487	<0.0001	-	-	-
Ammoniacal Nitrogen as N	0.0392	<0.01	0.392	<0.1	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00854	<0.0005	0.0854	<0.005	-	-	-
Free Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Phenol by HPLC (W)	<0.002	<0.002	<0.02	<0.02	-	-	-
Cresols by HPLC (W)	<0.006	<0.006	<0.06	<0.06	-	-	-
Xylenols by HPLC (W)	<0.008	<0.008	<0.08	<0.08	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Total Monohydric Phenols (W)	<0.016	<0.016	<0.16	<0.16	-	-	-
Chromium	0.00494	<0.001	0.0494	<0.01	-	-	-
Copper	0.0069	<0.0003	0.069	<0.003	-	-	-
Lead	0.000645	<0.0002	0.00645	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.000618	<0.0004	0.00618	<0.004	-	-	-
Selenium	0.00188	<0.001	0.0188	<0.01	-	-	-
Vanadium	0.0353	<0.001	0.353	<0.01	-	-	-
Zinc	0.00439	<0.001	0.0439	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.627	<0.019	6.27	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000265	<0.00001	0.000265	<0.0001	-	-	-
Acenaphthene by GCMS	0.0000345	<0.000005	0.000345	<0.00005	-	-	-
Acenaphthylene by GCMS	0.00000642	<0.000005	0.0000642	<0.00005	-	-	-
Fluoranthene by GCMS	0.000262	<0.000005	0.00262	<0.00005	-	-	-
Anthracene by GCMS	0.0000268	<0.000005	0.000268	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000949	<0.000005	0.000949	<0.00005	-	-	-
Fluorene by GCMS	0.0000126	<0.000005	0.000126	<0.00005	-	-	-
Chrysene by GCMS	0.0000063	<0.000005	0.000063	<0.00005	-	-	-
Pyrene by GCMS	0.000204	<0.000005	0.00204	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.0000461	<0.000005	0.000461	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.0000712	<0.000005	0.000712	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	0.00000781	<0.000005	0.0000781	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	0.0000617	<0.000005	0.000617	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	0.0000672	<0.000005	0.000672	<0.00005	-	-	-

Leach Test Information

Date Prepared	11-Sep-2019
pH (pH Units)	9.80
Conductivity (µS/cm)	128.00
Temperature (°C)	19.10
Volume Leachant (Litres)	0.896

Mcerts Certification does not apply to leachates
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CERTIFICATE OF ANALYSIS

SDG:	190909-23	**Client Reference:**		**Report Number:**	522124
Location:	Llanwern	**Order Number:**	LLA663	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.094	**Natural Moisture Content (%)**	4.82
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	95.4
Particle Size <4mm	>95%		

Case	
SDG	190909-23
Lab Sample Number(s)	20682259
Sampled Date	05-Sep-2019
Customer Sample Ref.	TPBP121
Depth (m)	0.20 - 0.20

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
PAH Spec MS - Aqueous (W)							
PAH 16 EPA Total by GCMS	0.000929	<0.000082	0.00929	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	0.012	<0.01	0.12	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	0.044	<0.01	0.44	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	11-Sep-2019
pH (pH Units)	9.80
Conductivity (µS/cm)	128.00
Temperature (°C)	19.10
Volume Leachant (Litres)	0.896

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	190909-23	**Client Reference:**		**Report Number:**	522124
Location:	Llanwern	**Order Number:**	LLA663	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.095	**Natural Moisture Content (%)**	6.27
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	94.1
Particle Size <4mm	>95%		

Case	
SDG	190909-23
Lab Sample Number(s)	20682266
Sampled Date	05-Sep-2019
Customer Sample Ref.	TPBP121
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Mercury Dissolved (CVAF)	0.0000169	<0.00001	0.000169	<0.0001	-	-	-
Ammoniacal Nitrogen as N	0.021	<0.01	0.21	<0.1	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00806	<0.0005	0.0806	<0.005	-	-	-
Free Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Phenol by HPLC (W)	<0.002	<0.002	<0.02	<0.02	-	-	-
Cresols by HPLC (W)	<0.006	<0.006	<0.06	<0.06	-	-	-
Xylenols by HPLC (W)	<0.008	<0.008	<0.08	<0.08	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Total Monohydric Phenols (W)	<0.016	<0.016	<0.16	<0.16	-	-	-
Chromium	0.00197	<0.001	0.0197	<0.01	-	-	-
Copper	0.00256	<0.0003	0.0256	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.000594	<0.0004	0.00594	<0.004	-	-	-
Selenium	0.00171	<0.001	0.0171	<0.01	-	-	-
Vanadium	0.0208	<0.001	0.208	<0.01	-	-	-
Zinc	0.00301	<0.001	0.0301	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.437	<0.019	4.37	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000303	<0.00001	0.000303	<0.0001	-	-	-
Acenaphthene by GCMS	0.000106	<0.000005	0.00106	<0.00005	-	-	-
Acenaphthylene by GCMS	0.0000362	<0.000005	0.000362	<0.00005	-	-	-
Fluoranthene by GCMS	0.000935	<0.000005	0.00935	<0.00005	-	-	-
Anthracene by GCMS	0.0000958	<0.000005	0.000958	<0.00005	-	-	-
Phenanthrene by GCMS	0.000033	<0.000005	0.00033	<0.00005	-	-	-
Fluorene by GCMS	0.000066	<0.000005	0.00066	<0.00005	-	-	-
Chrysene by GCMS	0.000142	<0.000005	0.00142	<0.00005	-	-	-
Pyrene by GCMS	0.000648	<0.000005	0.00648	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.00012	<0.000005	0.0012	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.000157	<0.000005	0.00157	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.0000717	<0.000005	0.000717	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.000101	<0.000002	0.00101	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	0.0000291	<0.000005	0.000291	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	0.000102	<0.000005	0.00102	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	0.0000971	<0.000005	0.000971	<0.00005	-	-	-

Leach Test Information

Date Prepared	11-Sep-2019
pH (pH Units)	8.56
Conductivity (µS/cm)	112.00
Temperature (°C)	21.10
Volume Leachant (Litres)	0.894

Mcerts Certification does not apply to leachates
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CERTIFICATE OF ANALYSIS

SDG:	190909-23	**Client Reference:**		**Report Number:**	522124
Location:	Llanwern	**Order Number:**	LLA663	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.095	**Natural Moisture Content (%)**	6.27
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	94.1
Particle Size <4mm	>95%		

Case	
SDG	190909-23
Lab Sample Number(s)	20682266
Sampled Date	05-Sep-2019
Customer Sample Ref.	TPBP121
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Concⁿ in 10:1 eluate (mg/l)		**A_2** 10:1 concⁿ leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
PAH Spec MS - Aqueous (W)							
PAH 16 EPA Total by GCMS	0.00277	<0.000082	0.0277	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	11-Sep-2019
pH (pH Units)	8.56
Conductivity (µS/cm)	112.00
Temperature (°C)	21.10
Volume Leachant (Litres)	0.894

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	190909-23	**Client Reference:**		**Report Number:**	522124
Location:	Llanwern	**Order Number:**	LLA663	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.098	**Natural Moisture Content (%)**	9.05
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	91.7
Particle Size <4mm	>95%		

Case	
SDG	190909-23
Lab Sample Number(s)	20682274
Sampled Date	05-Sep-2019
Customer Sample Ref.	TPBP121
Depth (m)	1.80 - 1.80

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Ammoniacal Nitrogen as N	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00539	<0.0005	0.0539	<0.005	-	-	-
Free Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Phenol by HPLC (W)	<0.002	<0.002	<0.02	<0.02	-	-	-
Cresols by HPLC (W)	<0.006	<0.006	<0.06	<0.06	-	-	-
Xylenols by HPLC (W)	<0.008	<0.008	<0.08	<0.08	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Total Monohydric Phenols (W)	<0.016	<0.016	<0.16	<0.16	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.00192	<0.0003	0.0192	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	0.00527	<0.003	0.0527	<0.03	-	-	-
Nickel	0.000755	<0.0004	0.00755	<0.004	-	-	-
Selenium	0.00481	<0.001	0.0481	<0.01	-	-	-
Vanadium	0.0107	<0.001	0.107	<0.01	-	-	-
Zinc	0.0152	<0.001	0.152	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000472	<0.00001	0.000472	<0.0001	-	-	-
Acenaphthene by GCMS	0.00000666	<0.000005	0.0000666	<0.00005	-	-	-
Acenaphthylene by GCMS	0.00000727	<0.000005	0.0000727	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000718	<0.000005	0.000718	<0.00005	-	-	-
Anthracene by GCMS	0.00001	<0.000005	0.0001	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000306	<0.000005	0.000306	<0.00005	-	-	-
Fluorene by GCMS	0.00000727	<0.000005	0.0000727	<0.00005	-	-	-
Chrysene by GCMS	0.0000191	<0.000005	0.000191	<0.00005	-	-	-
Pyrene by GCMS	0.0000471	<0.000005	0.000471	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.0000115	<0.000005	0.000115	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.0000193	<0.000005	0.000193	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.0000117	<0.000005	0.000117	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.0000124	<0.000002	0.000124	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	0.0000191	<0.000005	0.000191	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	0.0000107	<0.000005	0.000107	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	0.0000277	<0.000005	0.000277	<0.00005	-	-	-

Leach Test Information

Date Prepared	12-Sep-2019
pH (pH Units)	8.03
Conductivity (µS/cm)	178.00
Temperature (°C)	19.60
Volume Leachant (Litres)	0.892

Mcerts Certification does not apply to leachates
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CERTIFICATE OF ANALYSIS

SDG:	190909-23	**Client Reference:**		**Report Number:**	522124
Location:	Llanwern	**Order Number:**	LLA663	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.098	**Natural Moisture Content (%)**	9.05
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	91.7
Particle Size <4mm	>95%		

Case	
SDG	190909-23
Lab Sample Number(s)	20682274
Sampled Date	05-Sep-2019
Customer Sample Ref.	TPBP121
Depth (m)	1.80 - 1.80

Eluate Analysis	**C_2** Concⁿ in 10:1 eluate (mg/l)		**A_2** 10:1 concⁿ leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
PAH Spec MS - Aqueous (W)							
PAH 16 EPA Total by GCMS	0.000359	<0.000082	0.00359	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	12-Sep-2019
pH (pH Units)	8.03
Conductivity (µS/cm)	178.00
Temperature (°C)	19.60
Volume Leachant (Litres)	0.892

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	190909-23	**Client Reference:**		**Report Number:**	522124
Location:	Llanwern	**Order Number:**	LLA663	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.129	**Natural Moisture Content (%)**	42.9
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	70
Particle Size <4mm	>95%		

Case	
SDG	190909-23
Lab Sample Number(s)	20682281
Sampled Date	05-Sep-2019
Customer Sample Ref.	TPBP121
Depth (m)	2.00 - 2.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Ammoniacal Nitrogen as N	5.62	<0.01	56.2	<0.1	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00892	<0.0005	0.0892	<0.005	-	-	-
Free Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Phenol by HPLC (W)	<0.002	<0.002	<0.02	<0.02	-	-	-
Cresols by HPLC (W)	<0.006	<0.006	<0.06	<0.06	-	-	-
Xylenols by HPLC (W)	<0.008	<0.008	<0.08	<0.08	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Total Monohydric Phenols (W)	<0.016	<0.016	<0.16	<0.16	-	-	-
Chromium	0.00136	<0.001	0.0136	<0.01	-	-	-
Copper	0.00105	<0.0003	0.0105	<0.003	-	-	-
Lead	0.000506	<0.0002	0.00506	<0.002	-	-	-
Manganese	0.24	<0.003	2.4	<0.03	-	-	-
Nickel	0.00179	<0.0004	0.0179	<0.004	-	-	-
Selenium	<0.001	<0.001	<0.01	<0.01	-	-	-
Vanadium	0.00253	<0.001	0.0253	<0.01	-	-	-
Zinc	0.113	<0.001	1.13	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.663	<0.019	6.63	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000908	<0.00001	0.000908	<0.0001	-	-	-
Acenaphthene by GCMS	0.0000132	<0.000005	0.000132	<0.00005	-	-	-
Acenaphthylene by GCMS	0.0000079	<0.000005	0.000079	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000885	<0.000005	0.000885	<0.00005	-	-	-
Anthracene by GCMS	0.0000132	<0.000005	0.000132	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000256	<0.000005	0.000256	<0.00005	-	-	-
Fluorene by GCMS	0.0000198	<0.000005	0.000198	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.0000523	<0.000005	0.000523	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-

Leach Test Information

Date Prepared	12-Sep-2019
pH (pH Units)	7.91
Conductivity (µS/cm)	142.00
Temperature (°C)	19.70
Volume Leachant (Litres)	0.861

Mcerts Certification does not apply to leachates
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CERTIFICATE OF ANALYSIS

SDG:	190909-23	**Client Reference:**		**Report Number:**	522124
Location:	Llanwern	**Order Number:**	LLA663	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.129	**Natural Moisture Content (%)**	42.9
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	70
Particle Size <4mm	>95%		

Case	
SDG	190909-23
Lab Sample Number(s)	20682281
Sampled Date	05-Sep-2019
Customer Sample Ref.	TPBP121
Depth (m)	2.00 - 2.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
PAH Spec MS - Aqueous (W)							
PAH 16 EPA Total by GCMS	0.000311	<0.000082	0.00311	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	12-Sep-2019
pH (pH Units)	7.91
Conductivity (µS/cm)	142.00
Temperature (°C)	19.70
Volume Leachant (Litres)	0.861

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	190909-23	**Client Reference:**		**Report Number:**	522124
Location:	Llanwern	**Order Number:**	LLA663	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.099	**Natural Moisture Content (%)**	9.65
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	91.2
Particle Size <4mm	>95%		

Case	
SDG	190909-23
Lab Sample Number(s)	20682288
Sampled Date	05-Sep-2019
Customer Sample Ref.	TPBP123
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Ammoniacal Nitrogen as N	0.0165	<0.01	0.165	<0.1	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.0069	<0.0005	0.069	<0.005	-	-	-
Free Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Phenol by HPLC (W)	<0.002	<0.002	<0.02	<0.02	-	-	-
Cresols by HPLC (W)	<0.006	<0.006	<0.06	<0.06	-	-	-
Xylenols by HPLC (W)	<0.008	<0.008	<0.08	<0.08	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Total Monohydric Phenols (W)	<0.016	<0.016	<0.16	<0.16	-	-	-
Chromium	0.00137	<0.001	0.0137	<0.01	-	-	-
Copper	0.00151	<0.0003	0.0151	<0.003	-	-	-
Lead	0.000313	<0.0002	0.00313	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.000769	<0.0004	0.00769	<0.004	-	-	-
Selenium	0.00199	<0.001	0.0199	<0.01	-	-	-
Vanadium	0.0416	<0.001	0.416	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.601	<0.019	6.01	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.000234	<0.00001	0.00234	<0.0001	-	-	-
Acenaphthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Acenaphthylene by GCMS	0.00000595	<0.000005	0.0000595	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000797	<0.000005	0.000797	<0.00005	-	-	-
Anthracene by GCMS	0.0000149	<0.000005	0.000149	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000564	<0.000005	0.000564	<0.00005	-	-	-
Fluorene by GCMS	0.0000122	<0.000005	0.000122	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.000051	<0.000005	0.00051	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.00000566	<0.000005	0.0000566	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	0.00000969	<0.000005	0.0000969	<0.00005	-	-	-

Leach Test Information

Date Prepared	12-Sep-2019
pH (pH Units)	8.10
Conductivity (µS/cm)	93.60
Temperature (°C)	20.00
Volume Leachant (Litres)	0.891

Mcerts Certification does not apply to leachates
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CERTIFICATE OF ANALYSIS

SDG:	190909-23	**Client Reference:**		**Report Number:**	522124
Location:	Llanwern	**Order Number:**	LLA663	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.099	**Natural Moisture Content (%)**	9.65
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	91.2
Particle Size <4mm	>95%		

Case	
SDG	190909-23
Lab Sample Number(s)	20682288
Sampled Date	05-Sep-2019
Customer Sample Ref.	TPBP123
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Concⁿ in 10:1 eluate (mg/l)		**A_2** 10:1 concⁿ leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
PAH Spec MS - Aqueous (W)							
PAH 16 EPA Total by GCMS	0.000469	<0.000082	0.00469	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	0.03	<0.01	0.3	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	12-Sep-2019
pH (pH Units)	8.10
Conductivity (µS/cm)	93.60
Temperature (°C)	20.00
Volume Leachant (Litres)	0.891

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	190909-23	**Client Reference:**		**Report Number:**	522124
Location:	Llanwern	**Order Number:**	LLA663	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.097	**Natural Moisture Content (%)**	7.64
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	92.9
Particle Size <4mm	>95%		

Case	
SDG	190909-23
Lab Sample Number(s)	20682329
Sampled Date	05-Sep-2019
Customer Sample Ref.	TPBP122
Depth (m)	0.20 - 0.20

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Ammoniacal Nitrogen as N	0.0115	<0.01	0.115	<0.1	-	-	-
Total Cyanide (W)	0.06	<0.05	0.6	<0.5	-	-	-
Arsenic	0.00384	<0.0005	0.0384	<0.005	-	-	-
Free Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Phenol by HPLC (W)	<0.002	<0.002	<0.02	<0.02	-	-	-
Cresols by HPLC (W)	<0.006	<0.006	<0.06	<0.06	-	-	-
Xylenols by HPLC (W)	<0.008	<0.008	<0.08	<0.08	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Total Monohydric Phenols (W)	<0.016	<0.016	<0.16	<0.16	-	-	-
Chromium	0.00293	<0.001	0.0293	<0.01	-	-	-
Copper	0.00286	<0.0003	0.0286	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	0.0142	<0.001	0.142	<0.01	-	-	-
Vanadium	0.00729	<0.001	0.0729	<0.01	-	-	-
Zinc	0.00983	<0.001	0.0983	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.59	<0.019	5.9	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000462	<0.00001	0.000462	<0.0001	-	-	-
Acenaphthene by GCMS	0.000018	<0.000005	0.00018	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000193	<0.000005	0.000193	<0.00005	-	-	-
Anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000182	<0.000005	0.000182	<0.00005	-	-	-
Fluorene by GCMS	0.00000553	<0.000005	0.0000553	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.0000144	<0.000005	0.000144	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.00000804	<0.000005	0.0000804	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-

Leach Test Information

Date Prepared	12-Sep-2019
pH (pH Units)	8.46
Conductivity (µS/cm)	221.00
Temperature (°C)	19.50
Volume Leachant (Litres)	0.893

Mcerts Certification does not apply to leachates
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CERTIFICATE OF ANALYSIS

SDG:	190909-23	**Client Reference:**		**Report Number:**	522124
Location:	Llanwern	**Order Number:**	LLA663	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.097	**Natural Moisture Content (%)**	7.64
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	92.9
Particle Size <4mm	>95%		

Case	
SDG	190909-23
Lab Sample Number(s)	20682329
Sampled Date	05-Sep-2019
Customer Sample Ref.	TPBP122
Depth (m)	0.20 - 0.20

Eluate Analysis	**C_2** Concⁿ in 10:1 eluate (mg/l)		**A_2** 10:1 concⁿ leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
PAH Spec MS - Aqueous (W)							
PAH 16 EPA Total by GCMS	0.00013	<0.000082	0.0013	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	0.04	<0.01	0.4	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	0.04	<0.01	0.4	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	0.045	<0.01	0.45	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	12-Sep-2019
pH (pH Units)	8.46
Conductivity (µS/cm)	221.00
Temperature (°C)	19.50
Volume Leachant (Litres)	0.893

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	190909-23	**Client Reference:**		**Report Number:**	522124
Location:	Llanwern	**Order Number:**	LLA663	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.133	**Natural Moisture Content (%)**	47.1
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	68
Particle Size <4mm	>95%		

Case	
SDG	190909-23
Lab Sample Number(s)	20682343
Sampled Date	05-Sep-2019
Customer Sample Ref.	TPBP122
Depth (m)	1.80 - 1.80

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Ammoniacal Nitrogen as N	3.59	<0.01	35.9	<0.1	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.0109	<0.0005	0.109	<0.005	-	-	-
Free Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Phenol by HPLC (W)	<0.002	<0.002	<0.02	<0.02	-	-	-
Cresols by HPLC (W)	<0.006	<0.006	<0.06	<0.06	-	-	-
Xylenols by HPLC (W)	<0.008	<0.008	<0.08	<0.08	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Total Monohydric Phenols (W)	<0.016	<0.016	<0.16	<0.16	-	-	-
Chromium	0.00211	<0.001	0.0211	<0.01	-	-	-
Copper	0.00411	<0.0003	0.0411	<0.003	-	-	-
Lead	0.00206	<0.0002	0.0206	<0.002	-	-	-
Manganese	0.0693	<0.003	0.693	<0.03	-	-	-
Nickel	0.00369	<0.0004	0.0369	<0.004	-	-	-
Selenium	<0.001	<0.001	<0.01	<0.01	-	-	-
Vanadium	0.00435	<0.001	0.0435	<0.01	-	-	-
Zinc	0.00707	<0.001	0.0707	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.48	<0.019	4.8	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000227	<0.00001	0.000227	<0.0001	-	-	-
Acenaphthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Acenaphthylene by GCMS	0.0000105	<0.000005	0.000105	<0.00005	-	-	-
Fluoranthene by GCMS	0.000104	<0.000005	0.00104	<0.00005	-	-	-
Anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Phenanthrene by GCMS	0.000023	<0.000005	0.00023	<0.00005	-	-	-
Fluorene by GCMS	0.00000858	<0.000005	0.0000858	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.0000546	<0.000005	0.000546	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.0000131	<0.000005	0.000131	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.00000551	<0.000005	0.0000551	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.00000613	<0.000002	0.0000613	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	0.00000592	<0.000005	0.0000592	<0.00005	-	-	-

Leach Test Information

Date Prepared	12-Sep-2019
pH (pH Units)	6.97
Conductivity (µS/cm)	102.00
Temperature (°C)	19.90
Volume Leachant (Litres)	0.858

Mcerts Certification does not apply to leachates
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CERTIFICATE OF ANALYSIS

SDG:	190909-23	**Client Reference:**		**Report Number:**	522124
Location:	Llanwern	**Order Number:**	LLA663	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.133	**Natural Moisture Content (%)**	47.1
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	68
Particle Size <4mm	>95%		

Case	
SDG	190909-23
Lab Sample Number(s)	20682343
Sampled Date	05-Sep-2019
Customer Sample Ref.	TPBP122
Depth (m)	1.80 - 1.80

Eluate Analysis	**C_2** Concⁿ in 10:1 eluate (mg/l)		**A_2** 10:1 concⁿ leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
PAH Spec MS - Aqueous (W)							
PAH 16 EPA Total by GCMS	0.000254	<0.000082	0.00254	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	0.571	<0.05	5.71	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	0.015	<0.01	0.15	<0.1	-	-	-
Aliphatics >C8-C10	0.02	<0.01	0.2	<0.1	-	-	-
Aliphatics >C10-C12	0.223	<0.01	2.23	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	0.113	<0.01	1.13	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	0.043	<0.01	0.43	<0.1	-	-	-
Aromatics >EC10-EC12	0.149	<0.01	1.49	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	0.113	<0.007	1.13	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	0.571	<0.01	5.71	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	0.006	<0.005	0.06	<0.05	-	-	-
m & p Xylene by GC	0.013	<0.008	0.13	<0.08	-	-	-
o Xylene by GC	0.01	<0.003	0.1	<0.03	-	-	-
Sum m&p and o Xylene by GC	0.023	<0.011	0.23	<0.11	-	-	-
Sum of BTEX by GC	0.142	<0.028	1.42	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	12-Sep-2019
pH (pH Units)	6.97
Conductivity (µS/cm)	102.00
Temperature (°C)	19.90
Volume Leachant (Litres)	0.858

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	190909-23	**Client Reference:**		**Report Number:**	522124
Location:	Llanwern	**Order Number:**	LLA663	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.099	**Natural Moisture Content (%)**	9.41
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	91.4
Particle Size <4mm	>95%		

Case	
SDG	190909-23
Lab Sample Number(s)	20682352
Sampled Date	05-Sep-2019
Customer Sample Ref.	TPBP144
Depth (m)	0.10 - 0.10

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Ammoniacal Nitrogen as N	0.0139	<0.01	0.139	<0.1	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00709	<0.0005	0.0709	<0.005	-	-	-
Free Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Phenol by HPLC (W)	<0.002	<0.002	<0.02	<0.02	-	-	-
Cresols by HPLC (W)	<0.006	<0.006	<0.06	<0.06	-	-	-
Xylenols by HPLC (W)	<0.008	<0.008	<0.08	<0.08	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Total Monohydric Phenols (W)	<0.016	<0.016	<0.16	<0.16	-	-	-
Chromium	0.0013	<0.001	0.013	<0.01	-	-	-
Copper	0.00257	<0.0003	0.0257	<0.003	-	-	-
Lead	0.000265	<0.0002	0.00265	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	0.00183	<0.001	0.0183	<0.01	-	-	-
Vanadium	0.0412	<0.001	0.412	<0.01	-	-	-
Zinc	0.00385	<0.001	0.0385	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.254	<0.019	2.54	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000547	<0.00001	0.000547	<0.0001	-	-	-
Acenaphthene by GCMS	0.00000655	<0.000005	0.0000655	<0.00005	-	-	-
Acenaphthylene by GCMS	0.0000142	<0.000005	0.000142	<0.00005	-	-	-
Fluoranthene by GCMS	0.000135	<0.000005	0.00135	<0.00005	-	-	-
Anthracene by GCMS	0.0000328	<0.000005	0.000328	<0.00005	-	-	-
Phenanthrene by GCMS	0.000122	<0.000005	0.00122	<0.00005	-	-	-
Fluorene by GCMS	0.0000196	<0.000005	0.000196	<0.00005	-	-	-
Chrysene by GCMS	0.0000871	<0.000005	0.000871	<0.00005	-	-	-
Pyrene by GCMS	0.0000899	<0.000005	0.000899	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.0000599	<0.000005	0.000599	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.000115	<0.000005	0.00115	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.0000417	<0.000005	0.000417	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.0000504	<0.000002	0.000504	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	0.0000178	<0.000005	0.000178	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	0.0000509	<0.000005	0.000509	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	0.0000457	<0.000005	0.000457	<0.00005	-	-	-

Leach Test Information

Date Prepared	12-Sep-2019
pH (pH Units)	8.40
Conductivity (µS/cm)	128.00
Temperature (°C)	19.60
Volume Leachant (Litres)	0.892

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	190909-23	**Client Reference:**		**Report Number:**	522124
Location:	Llanwern	**Order Number:**	LLA663	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.099	**Natural Moisture Content (%)**	9.41
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	91.4
Particle Size <4mm	>95%		

Case	
SDG	190909-23
Lab Sample Number(s)	20682352
Sampled Date	05-Sep-2019
Customer Sample Ref.	TPBP144
Depth (m)	0.10 - 0.10

Eluate Analysis	**C_2** Concⁿ in 10:1 eluate (mg/l)		**A_2** 10:1 concⁿ leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
PAH Spec MS - Aqueous (W)							
PAH 16 EPA Total by GCMS	0.000943	<0.000082	0.00943	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	12-Sep-2019
pH (pH Units)	8.40
Conductivity (µS/cm)	128.00
Temperature (°C)	19.60
Volume Leachant (Litres)	0.892

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	190909-23	**Client Reference:**		**Report Number:**	522124
Location:	Llanwern	**Order Number:**	LLA663	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.099	**Natural Moisture Content (%)**	9.77
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	91.1
Particle Size <4mm	>95%		

Case	
SDG	190909-23
Lab Sample Number(s)	20682359
Sampled Date	05-Sep-2019
Customer Sample Ref.	TPBP144
Depth (m)	0.90 - 0.90

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Ammoniacal Nitrogen as N	0.0214	<0.01	0.214	<0.1	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00561	<0.0005	0.0561	<0.005	-	-	-
Free Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Phenol by HPLC (W)	<0.002	<0.002	<0.02	<0.02	-	-	-
Cresols by HPLC (W)	<0.006	<0.006	<0.06	<0.06	-	-	-
Xylenols by HPLC (W)	<0.008	<0.008	<0.08	<0.08	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Total Monohydric Phenols (W)	<0.016	<0.016	<0.16	<0.16	-	-	-
Chromium	0.0015	<0.001	0.015	<0.01	-	-	-
Copper	0.0016	<0.0003	0.016	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.000504	<0.0004	0.00504	<0.004	-	-	-
Selenium	0.00111	<0.001	0.0111	<0.01	-	-	-
Vanadium	0.0108	<0.001	0.108	<0.01	-	-	-
Zinc	0.00143	<0.001	0.0143	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.378	<0.019	3.78	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.000149	<0.00001	0.00149	<0.0001	-	-	-
Acenaphthene by GCMS	0.00000646	<0.000005	0.0000646	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000244	<0.000005	0.000244	<0.00005	-	-	-
Anthracene by GCMS	0.00000538	<0.000005	0.0000538	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000356	<0.000005	0.000356	<0.00005	-	-	-
Fluorene by GCMS	0.0000104	<0.000005	0.000104	<0.00005	-	-	-
Chrysene by GCMS	0.00000522	<0.000005	0.0000522	<0.00005	-	-	-
Pyrene by GCMS	0.0000148	<0.000005	0.000148	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	0.00000876	<0.000005	0.0000876	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	0.00000866	<0.000005	0.0000866	<0.00005	-	-	-

Leach Test Information

Date Prepared	12-Sep-2019
pH (pH Units)	8.72
Conductivity (µS/cm)	93.30
Temperature (°C)	19.70
Volume Leachant (Litres)	0.891

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CERTIFICATE OF ANALYSIS

SDG:	190909-23	**Client Reference:**		**Report Number:**	522124
Location:	Llanwern	**Order Number:**	LLA663	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.099	**Natural Moisture Content (%)**	9.77
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	91.1
Particle Size <4mm	>95%		

Case	
SDG	190909-23
Lab Sample Number(s)	20682359
Sampled Date	05-Sep-2019
Customer Sample Ref.	TPBP144
Depth (m)	0.90 - 0.90

Eluate Analysis	**C_2** Concⁿ in 10:1 eluate (mg/l)		**A_2** 10:1 concⁿ leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
PAH Spec MS - Aqueous (W)							
PAH 16 EPA Total by GCMS	0.000268	<0.000082	0.00268	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	0.024	<0.01	0.24	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	12-Sep-2019
pH (pH Units)	8.72
Conductivity (µS/cm)	93.30
Temperature (°C)	19.70
Volume Leachant (Litres)	0.891

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CERTIFICATE OF ANALYSIS

SDG:	190909-23	**Client Reference:**		**Report Number:**	522124
Location:	Llanwern	**Order Number:**	LLA663	**Superseded Report:**	

Table of Results - Appendix

Method No	Reference	Description
PM024	Modified BS 1377	Soil preparation including homogenisation, moisture screens of soils for Asbestos Containing Material
PM115		Leaching Procedure for CEN One Stage Leach Test 2:1 & 10:1 1 Step
TM024	Method 4500A & B, AWWA/APHA, 20th Ed., 1999	Determination of Exchangeable Ammonium and Ammoniacal Nitrogen as N by titration on solids
TM048	HSG 248, Asbestos: The analysts' guide for sampling, analysis and clearance procedures	Identification of Asbestos in Bulk Material
TM062 (S)	National Grid Property Holdings Methods for the Collection & Analysis of Samples from National Grid Sites version 1 Sec 3.9	Determination of Phenols in Soils by HPLC
TM089	Modified: US EPA Methods 8020 & 602	Determination of Gasoline Range Hydrocarbons (GRO) by Headspace GC-FID (C4-C12)
TM099	BS 2690: Part 7:1968 / BS 6068: Part2.11:1984	Determination of Ammonium in Water Samples using the Kone Analyser
TM116	Modified: US EPA Method 8260, 8120, 8020, 624, 610 & 602	Determination of Volatile Organic Compounds by Headspace / GC-MS
TM132	In - house Method	ELTRA CS800 Operators Guide
TM133	BS 1377: Part 3 1990;BS 6068-2.5	Determination of pH in Soil and Water using the GLpH pH Meter
TM152	Method 3125B, AWWA/APHA, 20th Ed., 1999	Analysis of Aqueous Samples by ICP-MS
TM153	Method 4500A,B,C, I, M AWWA/APHA, 20th Ed., 1999	Determination of Total Cyanide, Free (Easily Liberatable) Cyanide and Thiocyanate using the Skalar SANS+ System Segmented Flow Analyser
TM173	Analysis of Petroleum Hydrocarbons in Environmental Media – Total Petroleum Hydrocarbon Criteria	Determination of Speciated Extractable Petroleum Hydrocarbons in Soils by GC-FID
TM174	Analysis of Petroleum Hydrocarbons in Environmental Media – Total Petroleum Hydrocarbon Criteria	Determination of Speciated Extractable Petroleum Hydrocarbons in Waters by GC-FID
TM178	Modified: US EPA Method 8100	Determination of Polynuclear Aromatic Hydrocarbons (PAH) by GC-MS in Waters
TM181	US EPA Method 6010B	Determination of Routine Metals in Soil by iCap 6500 Duo ICP-OES
TM183	BS EN 23506:2002, (BS 6068-2.74:2002) ISBN 0 580 38924 3	Determination of Trace Level Mercury in Waters and Leachates by PSA Cold Vapour Atomic Fluorescence Spectrometry
TM218	Shaker extraction - EPA method 3546.	The determination of PAH in soil samples by GC-MS
TM221	Inductively Coupled Plasma - Atomic Emission Spectroscopy. An Atlas of Spectral Information: Winge, Fassel, Peterson and Floyd	Determination of Acid extractable Sulphate in Soils by IRIS Emission Spectrometer
TM227	Standard methods for the examination of waters and wastewaters 20th Edition, AWWA/APHA Method 4500.	Determination of Total Cyanide, Free (Easily Liberatable) Cyanide and Thiocyanate
TM243		Mixed Anions In Soils By Kone
TM245	By GC-FID	Determination of GRO by Headspace in waters
TM256	The measurement of Electrical Conductivity and the Laboratory determination of pH Value of Natural, Treated and Wastewaters. HMSO, 1978. ISBN 011 751428 4.	Determination of pH in Water and Leachate using the GLpH pH Meter
TM259	by HPLC	Determination of Phenols in Waters and Leachates by HPLC
TM304	HSE Contract research Report no 83/1996	Asbestos Quantification in Soil: Fibres identified by morphology only

NA = not applicable.

Chemical testing (unless subcontracted) performed at ALS Life Sciences Ltd Hawarden (Method codes TM) or ALS Life Sciences Ltd Aberdeen (Method codes S).

CERTIFICATE OF ANALYSIS

SDG:	190909-23	**Client Reference:**		**Report Number:**	522124
Location:	Llanwern	**Order Number:**	LLA663	**Superseded Report:**	

Test Completion Dates

Lab Sample No(s)	20682231	20682238	20682245	20682252	20682259	20682266	20682274	20682281	20682329	20682336
Customer Sample Ref.	TPBP120	TPBP120	TPBP120	TPBP120	TPBP121	TPBP121	TPBP121	TPBP121	TPBP122	TPBP122
AGS Ref.										
Depth	0.10 - 0.10	0.90 - 0.90	1.60 - 1.60	1.90 - 1.90	0.20 - 0.20	0.50 - 0.50	1.80 - 1.80	2.00 - 2.00	0.20 - 0.20	1.00 - 1.00
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
Ammonium Low	14-Sep-2019	14-Sep-2019	13-Sep-2019		14-Sep-2019	14-Sep-2019	14-Sep-2019	14-Sep-2019	14-Sep-2019	
Ammonium Soil by Titration	13-Sep-2019	13-Sep-2019	13-Sep-2019	13-Sep-2019	13-Sep-2019	13-Sep-2019	13-Sep-2019	16-Sep-2019	13-Sep-2019	16-Sep-2019
Anions by Kone (soil)	16-Sep-2019	18-Sep-2019	16-Sep-2019	19-Sep-2019	16-Sep-2019	16-Sep-2019	13-Sep-2019	16-Sep-2019	16-Sep-2019	16-Sep-2019
Asbestos ID in Solid Samples	13-Sep-2019	13-Sep-2019	13-Sep-2019	13-Sep-2019	13-Sep-2019	13-Sep-2019	13-Sep-2019	13-Sep-2019	13-Sep-2019	16-Sep-2019
Asbestos Quantification - Full							16-Sep-2019		16-Sep-2019	
CEN 10:1 Leachate (1 Stage)	11-Sep-2019	11-Sep-2019	11-Sep-2019		11-Sep-2019	11-Sep-2019	12-Sep-2019	12-Sep-2019	12-Sep-2019	
CEN Readings	12-Sep-2019	12-Sep-2019	12-Sep-2019		12-Sep-2019	12-Sep-2019	15-Sep-2019	15-Sep-2019	15-Sep-2019	
Cyanide Comp/Free/Total/Thiocyanate	16-Sep-2019	16-Sep-2019	16-Sep-2019	12-Sep-2019	16-Sep-2019	16-Sep-2019	16-Sep-2019	16-Sep-2019	16-Sep-2019	13-Sep-2019
Dissolved Metals by ICP-MS	16-Sep-2019	16-Sep-2019	17-Sep-2019		17-Sep-2019	17-Sep-2019	17-Sep-2019	17-Sep-2019	17-Sep-2019	
EPH CWG (Aliphatic) Aqueous GC (W)	18-Sep-2019	18-Sep-2019	16-Sep-2019		17-Sep-2019	17-Sep-2019	17-Sep-2019	17-Sep-2019	18-Sep-2019	
EPH CWG (Aliphatic) GC (S)	16-Sep-2019	16-Sep-2019	16-Sep-2019	16-Sep-2019	16-Sep-2019	16-Sep-2019	16-Sep-2019	16-Sep-2019	16-Sep-2019	16-Sep-2019
EPH CWG (Aromatic) Aqueous GC (W)	18-Sep-2019	18-Sep-2019	16-Sep-2019		17-Sep-2019	17-Sep-2019	17-Sep-2019	17-Sep-2019	18-Sep-2019	
EPH CWG (Aromatic) GC (S)	16-Sep-2019	16-Sep-2019	16-Sep-2019	16-Sep-2019	16-Sep-2019	16-Sep-2019	16-Sep-2019	16-Sep-2019	16-Sep-2019	16-Sep-2019
GRO by GC-FID (S)	16-Sep-2019	16-Sep-2019	17-Sep-2019	17-Sep-2019	17-Sep-2019	16-Sep-2019	16-Sep-2019	16-Sep-2019	16-Sep-2019	17-Sep-2019
GRO by GC-FID (W)	17-Sep-2019	17-Sep-2019	13-Sep-2019		13-Sep-2019	13-Sep-2019	16-Sep-2019	16-Sep-2019	16-Sep-2019	
Mercury Dissolved	13-Sep-2019	13-Sep-2019	13-Sep-2019		13-Sep-2019	13-Sep-2019	16-Sep-2019	16-Sep-2019	16-Sep-2019	
Metals in solid samples by OES	16-Sep-2019	16-Sep-2019	17-Sep-2019	17-Sep-2019	17-Sep-2019	16-Sep-2019	16-Sep-2019	16-Sep-2019	16-Sep-2019	16-Sep-2019
PAH by GCMS	17-Sep-2019	18-Sep-2019	17-Sep-2019	17-Sep-2019	17-Sep-2019	16-Sep-2019	16-Sep-2019	16-Sep-2019	17-Sep-2019	17-Sep-2019
PAH Spec MS - Aqueous (W)	17-Sep-2019	17-Sep-2019	16-Sep-2019		17-Sep-2019	17-Sep-2019	17-Sep-2019	17-Sep-2019	17-Sep-2019	
pH	16-Sep-2019	15-Sep-2019	15-Sep-2019	15-Sep-2019	15-Sep-2019	15-Sep-2019	16-Sep-2019	16-Sep-2019	16-Sep-2019	16-Sep-2019
pH Value	16-Sep-2019	16-Sep-2019	16-Sep-2019		16-Sep-2019	16-Sep-2019	16-Sep-2019	16-Sep-2019	16-Sep-2019	
Phenols by HPLC (S)	14-Sep-2019	16-Sep-2019	16-Sep-2019	14-Sep-2019	16-Sep-2019	16-Sep-2019	14-Sep-2019	14-Sep-2019	17-Sep-2019	17-Sep-2019
Phenols by HPLC (W)	17-Sep-2019	17-Sep-2019	17-Sep-2019		16-Sep-2019	17-Sep-2019	17-Sep-2019	16-Sep-2019	17-Sep-2019	
Sample description	10-Sep-2019	10-Sep-2019	11-Sep-2019	10-Sep-2019	10-Sep-2019	10-Sep-2019	10-Sep-2019	10-Sep-2019	11-Sep-2019	11-Sep-2019
Total Organic Carbon	14-Sep-2019	16-Sep-2019	16-Sep-2019	16-Sep-2019	14-Sep-2019	14-Sep-2019	14-Sep-2019	14-Sep-2019	16-Sep-2019	14-Sep-2019
Total Sulphate	16-Sep-2019	16-Sep-2019	17-Sep-2019	17-Sep-2019	16-Sep-2019	16-Sep-2019	16-Sep-2019	16-Sep-2019	16-Sep-2019	16-Sep-2019
Total Sulphur	14-Sep-2019	14-Sep-2019	16-Sep-2019	16-Sep-2019	14-Sep-2019	14-Sep-2019	14-Sep-2019	14-Sep-2019	14-Sep-2019	14-Sep-2019
TPH CWG (W)	18-Sep-2019	18-Sep-2019	16-Sep-2019		17-Sep-2019	17-Sep-2019	17-Sep-2019	17-Sep-2019	18-Sep-2019	
TPH CWG GC (S)	16-Sep-2019	16-Sep-2019	17-Sep-2019	17-Sep-2019	17-Sep-2019	16-Sep-2019	16-Sep-2019	16-Sep-2019	16-Sep-2019	17-Sep-2019
VOC MS (S)	13-Sep-2019	13-Sep-2019	16-Sep-2019	16-Sep-2019	16-Sep-2019	13-Sep-2019	13-Sep-2019	13-Sep-2019	13-Sep-2019	13-Sep-2019

Lab Sample No(s)	20682343	20682204	20682288	20682295	20682223	20682352	20682359	20682367
Customer Sample Ref.	TPBP122	TPBP123	TPBP123	TPBP123	TPBP144	TPBP144	TPBP144	TPBP144
AGS Ref.								
Depth	1.80 - 1.80	0.20 - 0.20	0.50 - 0.50	1.50 - 1.50	1.80 - 1.80	0.10 - 0.10	0.90 - 0.90	1.40 - 1.40
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
Ammonium Low	14-Sep-2019	13-Sep-2019	14-Sep-2019			14-Sep-2019	14-Sep-2019	
Ammonium Soil by Titration	13-Sep-2019	13-Sep-2019	13-Sep-2019	13-Sep-2019	13-Sep-2019	16-Sep-2019	13-Sep-2019	16-Sep-2019
Anions by Kone (soil)	16-Sep-2019	16-Sep-2019	16-Sep-2019	19-Sep-2019	19-Sep-2019	16-Sep-2019	16-Sep-2019	16-Sep-2019
Asbestos ID in Solid Samples	16-Sep-2019	13-Sep-2019	13-Sep-2019	13-Sep-2019	16-Sep-2019	13-Sep-2019	13-Sep-2019	13-Sep-2019
CEN 10:1 Leachate (1 Stage)	12-Sep-2019	11-Sep-2019	12-Sep-2019			12-Sep-2019	12-Sep-2019	
CEN Readings	15-Sep-2019	12-Sep-2019	15-Sep-2019			15-Sep-2019	15-Sep-2019	
Cyanide Comp/Free/Total/Thiocyanate	16-Sep-2019	16-Sep-2019	16-Sep-2019	13-Sep-2019	13-Sep-2019	16-Sep-2019	16-Sep-2019	13-Sep-2019
Dissolved Metals by ICP-MS	17-Sep-2019	17-Sep-2019	17-Sep-2019			17-Sep-2019	17-Sep-2019	
EPH CWG (Aliphatic) Aqueous GC (W)	17-Sep-2019	17-Sep-2019	17-Sep-2019			17-Sep-2019	17-Sep-2019	
EPH CWG (Aliphatic) GC (S)	16-Sep-2019	16-Sep-2019	16-Sep-2019	13-Sep-2019	13-Sep-2019	16-Sep-2019	16-Sep-2019	16-Sep-2019
EPH CWG (Aromatic) Aqueous GC (W)	17-Sep-2019	17-Sep-2019	17-Sep-2019			17-Sep-2019	17-Sep-2019	
EPH CWG (Aromatic) GC (S)	16-Sep-2019	16-Sep-2019	16-Sep-2019	13-Sep-2019	13-Sep-2019	16-Sep-2019	16-Sep-2019	16-Sep-2019
GRO by GC-FID (S)	16-Sep-2019	16-Sep-2019	17-Sep-2019	16-Sep-2019	16-Sep-2019	16-Sep-2019	18-Sep-2019	16-Sep-2019
GRO by GC-FID (W)	16-Sep-2019	13-Sep-2019	16-Sep-2019			16-Sep-2019	16-Sep-2019	
Mercury Dissolved	16-Sep-2019	13-Sep-2019	16-Sep-2019			16-Sep-2019	16-Sep-2019	
Metals in solid samples by OES	16-Sep-2019	16-Sep-2019	16-Sep-2019	17-Sep-2019	17-Sep-2019	16-Sep-2019	16-Sep-2019	15-Sep-2019
PAH by GCMS	17-Sep-2019	16-Sep-2019	16-Sep-2019	17-Sep-2019	17-Sep-2019	17-Sep-2019	17-Sep-2019	18-Sep-2019
PAH Spec MS - Aqueous (W)	17-Sep-2019	17-Sep-2019	17-Sep-2019			17-Sep-2019	17-Sep-2019	
pH	16-Sep-2019	16-Sep-2019	15-Sep-2019	16-Sep-2019	16-Sep-2019	16-Sep-2019	16-Sep-2019	16-Sep-2019
pH Value	16-Sep-2019	16-Sep-2019	16-Sep-2019			16-Sep-2019	16-Sep-2019	
Phenols by HPLC (S)	14-Sep-2019	16-Sep-2019	17-Sep-2019	16-Sep-2019	14-Sep-2019	14-Sep-2019	14-Sep-2019	14-Sep-2019
Phenols by HPLC (W)	17-Sep-2019	16-Sep-2019	17-Sep-2019			17-Sep-2019	17-Sep-2019	
Sample description	11-Sep-2019	10-Sep-2019	10-Sep-2019	11-Sep-2019	11-Sep-2019	11-Sep-2019	11-Sep-2019	11-Sep-2019
Total Organic Carbon	14-Sep-2019	14-Sep-2019	14-Sep-2019	16-Sep-2019	16-Sep-2019	14-Sep-2019	14-Sep-2019	14-Sep-2019
Total Sulphate	16-Sep-2019	16-Sep-2019	16-Sep-2019	16-Sep-2019	16-Sep-2019	16-Sep-2019	16-Sep-2019	16-Sep-2019
Total Sulphur	14-Sep-2019	14-Sep-2019	14-Sep-2019	14-Sep-2019	14-Sep-2019	14-Sep-2019	14-Sep-2019	14-Sep-2019
TPH CWG (W)	17-Sep-2019	17-Sep-2019	17-Sep-2019			17-Sep-2019	17-Sep-2019	
TPH CWG GC (S)	16-Sep-2019	16-Sep-2019	17-Sep-2019	16-Sep-2019	16-Sep-2019	16-Sep-2019	18-Sep-2019	16-Sep-2019
VOC MS (S)	13-Sep-2019	13-Sep-2019	13-Sep-2019	13-Sep-2019	16-Sep-2019	16-Sep-2019	16-Sep-2019	16-Sep-2019

Appendix General

1. Results are expressed on a dry weight basis (dried at 35ºC) for all soil analyses except for the following: NRA and CEN Leach tests, flash point LOI, pH, ammonium as NH4 by the BRE method, VOC TICs and SVOC TICs.

2. If sufficient sample is received a sub sample will be retained free of charge for 30 days after analysis is completed (e-mailed) for all sample types unless the sample is destroyed on testing. The prepared soil sub sample that is analysed for asbestos will be retained for a period of 6 months after the analysis date. All bulk samples will be retained for a period of 6 months after the analysis date. All samples received and not scheduled will be disposed of one month after the date of receipt unless we are instructed to the contrary. Once the initial period has expired, a storage charge will be applied for each month or part thereof until the client cancels the request for sample storage. ALS reserve the right to charge for samples received and stored but not analysed.

3. With respect to turnaround, we will always endeavour to meet client requirements wherever possible, but turnaround times cannot be absolutely guaranteed due to so many variables beyond our control.

4. We take responsibility for any test performed by sub-contractors (marked with an asterisk). We endeavour to use UKAS/MCERTS Accredited Laboratories, who either complete a quality questionnaire or are audited by ourselves. For some determinands there are no UKAS/MCERTS Accredited Laboratories, in this instance a laboratory with a known track record will be utilised.

5. If no separate volatile sample is supplied by the client, or if a headspace or sediment is present in the volatile sample, the integrity of the data may be compromised. This will be flagged up as an invalid VOC on the test schedule and the result marked as deviating on the test certificate.

6. NDP - No determination possible due to insufficient/unsuitable sample.

7. Results relate only to the items tested.

8. LoDs (Limit of Detection) for wet tests reported on a dry weight basis are not corrected for moisture content.

9. **Surrogate recoveries** - Surrogates are added to your sample to monitor recovery of the test requested. A % recovery is reported, results are not corrected for the recovery measured. Typical recoveries for organics tests are 70-130%. Recoveries in soils are affected by organic rich or clay rich matrices. Waters can be affected by remediation fluids or high amounts of sediment. Test results are only ever reported if all of the associated quality checks pass; it is assumed that all recoveries outside of the values above are due to matrix affect.

10. Stones/debris are not routinely removed. We always endeavour to take a representative sub sample from the received sample.

11. In certain circumstances the method detection limit may be elevated due to the sample being outside the calibration range. Other factors that may contribute to this include possible interferences. In both cases the sample would be diluted which would cause the method detection limit to be raised.

12. Mercury results quoted on soils will not include volatile mercury as the analysis is performed on a dried and crushed sample.

13. For leachate preparations other than Zero Headspace Extraction (ZHE) volatile loss may occur.

14. For the BSEN 12457-3 two batch process to allow the cumulative release to be calculated, the volume of the leachate produced is measured and filtered for all tests. We therefore cannot carry out any unfiltered analysis. The tests affected include volatiles GCFID/GCMS and all subcontracted analysis.

15. Analysis and identification of specific compounds using GCFID is by retention time only, and we routinely calibrate and quantify for benzene, toluene, ethylbenzenes and xylenes (BTEX). For total volatiles in the C5-C12 range, the total area of the chromatogram is integrated and expressed as ug/kg or ug/l. Although this analysis is commonly used for the quantification of gasoline range organics (GRO), the system will also detect other compounds such as chlorinated solvents, and this may lead to a falsely high result with respect to hydrocarbons only. It is not possible to specifically identify these non-hydrocarbons, as standards are not routinely run for any other compounds, and for more definitive identification, volatiles by GCMS should be utilised.

16. We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample. Other coarse granular material such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

17. **Tentatively Identified Compounds (TICs)** are non-target peaks in VOC and SVOC analysis. All non-target peaks detected with a concentration above the LoD are subjected to a mass spectral library search. Non-target peaks with a library search confidence of >75% are reported based on the best mass spectral library match. When a non-target peak with a library search confidence of <75% is detected it is reported as “mixed hydrocarbons”. Non-target compounds identified from the scan data are semi-quantified relative to one of the deuterated internal standards, under the same chromatographic conditions as the target compounds. This result is reported as a semi-quantitative value and reported as Tentatively Identified Compounds (TICs). TICs are outside the scope of UKAS accreditation and are not moisture corrected.

18. **Sample Deviations**

If a sample is classed as deviated then the associated results may be compromised.

1	**Container with Headspace provided for volatiles analysis**
2	**Incorrect container received**
3	**Deviation from method**
§	**Sampled on date not provided**
♦	**Sample holding time exceeded in laboratory**
@	**Sample holding time exceeded due to late arrival of instructions or samples**

19. **Asbestos**

When requested, the individual sub sample scheduled will be analysed in house for the presence of asbestos fibres and asbestos containing material by our documented in house method TM048 based on HSG 248 (2005), which is accredited to ISO17025. If a specific asbestos fibre type is not found this will be reported as “Not detected”. If no asbestos fibre types are found all will be reported as “Not detected” and the sub sample analysed deemed to be clear of asbestos. If an asbestos fibre type is found it will be reported as detected (for each fibre type found). Testing can be carried out on asbestos positive samples, but, due to Health and Safety considerations, may be replaced by alternative tests or reported as No Determination Possible (NDP). The quantity of

Identification of Asbestos in Bulk Materials & Soils

The results for identification of asbestos in bulk materials are obtained from supplied bulk materials which have been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

The results for identification of asbestos in soils are obtained from a homogenised sub sample which has been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

Asbestos Type	Common Name
Chrysotile	White Asbestos
Amosite	Brown Asbestos
Crocidolite	Blue Asbestos
Fibrous Actinolite	-
Fibrous Anthophyllite	-
Fibrous Tremolite	-

Visual Estimation Of Fibre Content

Estimation of fibre content is not permitted as part of our UKAS accredited test other than: - Trace - Where only one or two asbestos fibres were identified.

Respirable Fibres

Respirable fibres are defined as fibres of <3 µm diameter, longer than 5 µm and with aspect ratios of at least 3:1 that can be inhaled into the lower regions of the lung and are generally acknowledged to be most important predictor of hazard and risk for cancers of the lung.
Standing Committee of Analysts, *The Quantification of Asbestos in Soil (2107).*

Further guidance on typical asbestos fibre content of manufactured products can be found in HSG 264.

The identification of asbestos containing materials and soils falls within our schedule of tests for which we hold UKAS accreditation, however opinions, interpretations and all other information contained in the report are outside the scope of UKAS accreditation.

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Atkins Global Ltd
Project Jonah site office
Llan Coed House
Suite 24
Coed Darcy
Llandarcy
SA10 6HJ

Attention: Scott Bowler

CERTIFICATE OF ANALYSIS

Date of report Generation:	19 September 2019
Customer:	Atkins Global Ltd
Sample Delivery Group (SDG):	190909-23
Your Reference:	
Location:	Llanwern
Report No:	522124

We received 18 samples on Monday September 09, 2019 and 18 of these samples were scheduled for analysis which was completed on Thursday September 19, 2019. Accredited laboratory tests are defined within the report, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation.

Should this report require incorporation into client reports, it must be used in its entirety and not simply with the data sections alone.

Chemical testing (unless subcontracted) performed at ALS Life Sciences Ltd Hawarden (Method codes TM) or ALS Life Sciences Ltd Aberdeen (Method codes S).

All sample data is provided by the customer. The reported results relate to the sample supplied, and on the basis that this data is correct.
Incorrect sampling dates and/or sample information will affect the validity of results.
The customer is not permitted to reproduce this report except in full without the approval of the laboratory.

Approved By:

Sonia McWhan
Operations Manager

CERTIFICATE OF ANALYSIS

SDG:	190909-23	**Client Reference:**		**Report Number:**	522124
Location:	Llanwern	**Order Number:**	LLA663	**Superseded Report:**	

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
20682231	TPBP120		0.10 - 0.10	05/09/2019
20682238	TPBP120		0.90 - 0.90	05/09/2019
20682245	TPBP120		1.60 - 1.60	05/09/2019
20682252	TPBP120		1.90 - 1.90	05/09/2019
20682259	TPBP121		0.20 - 0.20	05/09/2019
20682266	TPBP121		0.50 - 0.50	05/09/2019
20682274	TPBP121		1.80 - 1.80	05/09/2019
20682281	TPBP121		2.00 - 2.00	05/09/2019
20682329	TPBP122		0.20 - 0.20	05/09/2019
20682336	TPBP122		1.00 - 1.00	05/09/2019
20682343	TPBP122		1.80 - 1.80	05/09/2019
20682204	TPBP123		0.20 - 0.20	05/09/2019
20682288	TPBP123		0.50 - 0.50	05/09/2019
20682295	TPBP123		1.50 - 1.50	05/09/2019
20682352	TPBP144		0.10 - 0.10	05/09/2019
20682359	TPBP144		0.90 - 0.90	05/09/2019
20682367	TPBP144		1.40 - 1.40	05/09/2019
20682223	TPBP144		1.80 - 1.80	05/09/2019

Maximum Sample/Coolbox Temperature (°C) : **16.8**

ISO5667-3 Water quality - Sampling - Part3 -

During Transportation samples shall be stored in a cooling device capable of maintaining a temperature of (5±3)°C.

ALS have data which show that a cool box with 4 frozen icepacks is capable of maintaining pre-chilled samples at a temperature of (5±3)°C for a period of up to 24hrs.

Only received samples which have had analysis scheduled will be shown on the following pages.

Validated

CERTIFICATE OF ANALYSIS

SDG:	190909-23	**Client Reference:**		**Report Number:**	522124
Location:	Llanwern	**Order Number:**	LLA663	**Superseded Report:**	

Results Legend

X Test

N No Determination Possible

Sample Types -
S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

			Lab Sample No(s)	20682231			20682238			20682245			20682252			20682259			20682266			20682274
			Customer Sample Reference	TPBP120			TPBP120			TPBP120			TPBP120			TPBP121			TPBP121			TPBP121
			AGS Reference																			
			Depth (m)	0.10 - 0.10			0.90 - 0.90			1.60 - 1.60			1.90 - 1.90			0.20 - 0.20			0.50 - 0.50			1.80 - 1.80
			Container	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB
			Sample Type	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
Ammonium Low	All	NDPs: 0 Tests: 13		X			X			X						X			X			X
Ammonium Soil by Titration	All	NDPs: 0 Tests: 18			X			X			X			X			X			X		
Anions by Kone (soil)	All	NDPs: 0 Tests: 18			X			X			X			X			X			X		
Asbestos ID in Solid Samples	All	NDPs: 0 Tests: 18		X			X			X			X			X			X			X
Asbestos Quantification - Full	All	NDPs: 0 Tests: 2																				X
CEN Readings	All	NDPs: 0 Tests: 13		X			X			X						X			X			X
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 31		X	X		X	X		X	X			X		X	X		X	X		X
Dissolved Metals by ICP-MS	All	NDPs: 0 Tests: 13		X			X			X						X			X			X
EPH CWG (Aliphatic) Aqueous GC (W)	All	NDPs: 0 Tests: 13		X			X			X						X			X			X
EPH CWG (Aliphatic) GC (S)	All	NDPs: 0 Tests: 18			X			X			X			X			X			X		
EPH CWG (Aromatic) Aqueous GC (W)	All	NDPs: 0 Tests: 13		X			X			X						X			X			X
EPH CWG (Aromatic) GC (S)	All	NDPs: 0 Tests: 18			X			X			X			X			X			X		
GRO by GC-FID (S)	All	NDPs: 0 Tests: 18				X			X			X			X			X			X		
GRO by GC-FID (W)	All	NDPs: 0 Tests: 13		X			X			X						X			X			X
Mercury Dissolved	All	NDPs: 0 Tests: 13		X			X			X						X			X			X

20682295	TPBP123		1.50 - 1.50	1kg TUB	S					x												
20682288	TPBP123		0.50 - 0.50	60g VOC (ALE215)	S																x	
				250g Amber Jar (ALE210)	S		x		x					x				x			x		
				1kg TUB	S	x				x			x	x		x	x			x			x	x
20682204	TPBP123		0.20 - 0.20	60g VOC (ALE215)	S																x	
				250g Amber Jar (ALE210)	S		x		x					x				x			x		
				1kg TUB	S	x				x			x	x		x	x			x			x	x
20682343	TPBP122		1.80 - 1.80	60g VOC (ALE215)	S																x	
				250g Amber Jar (ALE210)	S		x		x					x				x			x		
				1kg TUB	S	x				x			x	x		x	x			x			x	x
20682336	TPBP122		1.00 - 1.00	60g VOC (ALE215)	S																x	
				250g Amber Jar (ALE210)	S		x		x					x				x			x		
				1kg TUB	S					x												
20682329	TPBP122		0.20 - 0.20	60g VOC (ALE215)	S																x	
				250g Amber Jar (ALE210)	S		x		x					x				x			x		
				1kg TUB	S	x				x	x		x	x		x	x			x			x	x
20682281	TPBP121		2.00 - 2.00	60g VOC (ALE215)	S																x	
				250g Amber Jar (ALE210)	S		x		x					x				x			x		
				1kg TUB	S	x				x			x	x		x	x			x			x	x
20682274	TPBP121		1.80 - 1.80	60g VOC (ALE215)	S																x	
				250g Amber Jar (ALE210)	S		x		x					x				x			x		

Validated

CERTIFICATE OF ANALYSIS

SDG: 190909-23
Location: Llanwern
Client Reference:
Order Number: LLA663
Report Number: 522124
Superseded Report:

Results Legend

- X — Test
- N — No Determination Possible

Sample Types -
S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

Lab Sample No(s)			20682231			20682238			20682245			20682252			20682259			20682266			20682274
Customer Sample Reference			TPBP120			TPBP120			TPBP120			TPBP120			TPBP121			TPBP121			TPBP121
AGS Reference																					
Depth (m)			0.10 - 0.10			0.90 - 0.90			1.60 - 1.60			1.90 - 1.90			0.20 - 0.20			0.50 - 0.50			1.80 - 1.80
Container			1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB
Sample Type			S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
Metals in solid samples by OES	All	NDPs: 0 Tests: 18		X			X			X			X			X			X		
PAH by GCMS	All	NDPs: 0 Tests: 18		X			X			X			X			X			X		
PAH Spec MS - Aqueous (W)	All	NDPs: 0 Tests: 13	X			X			X						X			X			X
pH	All	NDPs: 0 Tests: 18		X			X			X			X			X			X		
pH Value	All	NDPs: 0 Tests: 13	X			X			X						X			X			X
Phenols by HPLC (S)	All	NDPs: 0 Tests: 18		X			X			X			X			X			X		
Phenols by HPLC (W)	All	NDPs: 0 Tests: 13	X			X			X						X			X			X
Sample description	All	NDPs: 0 Tests: 18		X			X			X			X			X			X		
Total Organic Carbon	All	NDPs: 0 Tests: 18		X			X			X			X			X			X		
Total Sulphate	All	NDPs: 0 Tests: 18		X			X			X			X			X			X		
Total Sulphur	All	NDPs: 0 Tests: 18		X			X			X			X			X			X		
TPH CWG (W)	All	NDPs: 0 Tests: 13	X			X			X						X			X			X
TPH CWG GC (S)	All	NDPs: 0 Tests: 18		X			X			X			X			X			X		
VOC MS (S)	All	NDPs: 0 Tests: 18			X			X			X			X			X			X	

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20682295	TPBP123		1.50 - 1.50	1kg TUB	S															
20682288	TPBP123		0.50 - 0.50	60g VOC (ALE215)	S															X
				250g Amber Jar (ALE210)	S	X	X		X		X		X	X	X	X		X		
				1kg TUB	S			X		X		X					X			
20682204	TPBP123		0.20 - 0.20	60g VOC (ALE215)	S															X
				250g Amber Jar (ALE210)	S	X	X		X		X		X	X	X	X		X		
				1kg TUB	S			X		X		X					X			
20682343	TPBP122		1.80 - 1.80	60g VOC (ALE215)	S															X
				250g Amber Jar (ALE210)	S	X	X		X		X		X	X	X	X		X		
				1kg TUB	S			X		X		X					X			
20682336	TPBP122		1.00 - 1.00	60g VOC (ALE215)	S															X
				250g Amber Jar (ALE210)	S	X	X		X		X		X	X	X	X		X		
				1kg TUB	S															
20682329	TPBP122		0.20 - 0.20	60g VOC (ALE215)	S															X
				250g Amber Jar (ALE210)	S	X	X		X		X		X	X	X	X		X		
				1kg TUB	S			X		X		X					X			
20682281	TPBP121		2.00 - 2.00	60g VOC (ALE215)	S															X
				250g Amber Jar (ALE210)	S	X	X		X		X		X	X	X	X		X		
				1kg TUB	S			X		X		X					X			
20682274	TPBP121		1.80 - 1.80	60g VOC (ALE215)	S															X
				250g Amber Jar (ALE210)	S	X	X		X		X		X	X	X	X		X		

Validated

CERTIFICATE OF ANALYSIS

SDG:	190909-23	**Client Reference:**		**Report Number:**	522124
Location:	Llanwern	**Order Number:**	LLA663	**Superseded Report:**	

Results Legend

- X — Test
- N — No Determination Possible

Sample Types -

S - Soil/Solid
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GW - Ground Water
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UNL - Unspecified Liquid
SL - Sludge
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Lab Sample No(s)			20682295		20682352			20682359			20682367			20682223		
Customer Sample Reference			TPBP123		TPBP144			TPBP144			TPBP144			TPBP144		
AGS Reference																
Depth (m)			1.50 - 1.50		0.10 - 0.10			0.90 - 0.90			1.40 - 1.40			1.80 - 1.80		
Container			250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)
Sample Type			S	S	S	S	S	S	S	S	S	S	S	S	S	S
Ammonium Low	All	NDPs: 0 Tests: 13			X			X								
Ammonium Soil by Titration	All	NDPs: 0 Tests: 18	X			X			X			X			X	
Anions by Kone (soil)	All	NDPs: 0 Tests: 18	X			X			X			X			X	
Asbestos ID in Solid Samples	All	NDPs: 0 Tests: 18			X			X			X			X		
CEN Readings	All	NDPs: 0 Tests: 13			X			X								
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 31	X		X	X		X	X			X			X	
Dissolved Metals by ICP-MS	All	NDPs: 0 Tests: 13			X			X								
EPH CWG (Aliphatic) Aqueous GC (W)	All	NDPs: 0 Tests: 13			X			X								
EPH CWG (Aliphatic) GC (S)	All	NDPs: 0 Tests: 18	X			X			X			X			X	
EPH CWG (Aromatic) Aqueous GC (W)	All	NDPs: 0 Tests: 13			X			X								
EPH CWG (Aromatic) GC (S)	All	NDPs: 0 Tests: 18	X			X			X			X			X	
GRO by GC-FID (S)	All	NDPs: 0 Tests: 18		X			X			X			X			X
GRO by GC-FID (W)	All	NDPs: 0 Tests: 13			X			X								
Mercury Dissolved	All	NDPs: 0 Tests: 13			X			X								
Metals in solid samples by OES	All	NDPs: 0 Tests: 18	X			X			X			X			X	

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Validated

CERTIFICATE OF ANALYSIS

SDG:	190909-23	**Client Reference:**		**Report Number:**	522124
Location:	Llanwern	**Order Number:**	LLA663	**Superseded Report:**	

Results Legend

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Sample Types -

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- US - Untreated Sewage
- RE - Recreational Water
- DW - Drinking Water Non-regulatory
- UNL - Unspecified Liquid
- SL - Sludge
- G - Gas
- OTH - Other

Lab Sample No(s)			20682295		20682352			20682359			20682367			20682223		
Customer Sample Reference			TPBP123		TPBP144			TPBP144			TPBP144			TPBP144		
AGS Reference																
Depth (m)			1.50 - 1.50		0.10 - 0.10			0.90 - 0.90			1.40 - 1.40			1.80 - 1.80		
Container			250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)
Sample Type			S	S	S	S	S	S	S	S	S	S	S	S	S	S
PAH by GCMS	All	NDPs: 0 Tests: 18	X			X			X			X			X	
PAH Spec MS - Aqueous (W)	All	NDPs: 0 Tests: 13			X			X								
pH	All	NDPs: 0 Tests: 18	X			X			X			X			X	
pH Value	All	NDPs: 0 Tests: 13			X			X								
Phenols by HPLC (S)	All	NDPs: 0 Tests: 18	X			X			X			X			X	
Phenols by HPLC (W)	All	NDPs: 0 Tests: 13			X			X								
Sample description	All	NDPs: 0 Tests: 18	X			X			X			X			X	
Total Organic Carbon	All	NDPs: 0 Tests: 18	X			X			X			X			X	
Total Sulphate	All	NDPs: 0 Tests: 18	X			X			X			X			X	
Total Sulphur	All	NDPs: 0 Tests: 18	X			X			X			X			X	
TPH CWG (W)	All	NDPs: 0 Tests: 13			X			X								
TPH CWG GC (S)	All	NDPs: 0 Tests: 18	X			X			X			X			X	
VOC MS (S)	All	NDPs: 0 Tests: 18		X			X			X			X			X

CERTIFICATE OF ANALYSIS

SDG:	190909-23	**Client Reference:**		**Report Number:**	522124
Location:	Llanwern	**Order Number:**	LLA663	**Superseded Report:**	

Sample Descriptions

Grain Sizes

very fine	<0.063mm	**fine**	0.063mm - 0.1mm	**medium**	0.1mm - 2mm	**coarse**	2mm - 10mm	**very coarse**	>10mm

Lab Sample No(s)	Customer Sample Ref.	Depth (m)	Colour	Description	Inclusions	Inclusions 2
20682231	TPBP120	0.10 - 0.10	Dark Brown	Loamy Sand	Crushed Brick	Concrete/Aggregate
20682238	TPBP120	0.90 - 0.90	Dark Brown	Loamy Sand	Crushed Brick	Stones
20682245	TPBP120	1.60 - 1.60	Dark Brown	Stone/Soil	Crushed Brick	Stones
20682252	TPBP120	1.90 - 1.90	Dark Brown	Sandy Loam	Stones	Vegetation
20682259	TPBP121	0.20 - 0.20	Dark Brown	Loamy Sand	Crushed Brick	Concrete/Aggregate
20682266	TPBP121	0.50 - 0.50	Dark Brown	Loamy Sand	Stones	Crushed Brick
20682274	TPBP121	1.80 - 1.80	Dark Brown	Loamy Sand	Stones	Vegetation
20682281	TPBP121	2.00 - 2.00	Dark Brown	Silty Clay Loam	Vegetation	None
20682329	TPBP122	0.20 - 0.20	Dark Brown	Sandy Loam	Crushed Brick	Stones
20682336	TPBP122	1.00 - 1.00	Dark Brown	Loamy Sand	Stones	None
20682343	TPBP122	1.80 - 1.80	Dark Brown	Sandy Loam	Stones	Vegetation
20682204	TPBP123	0.20 - 0.20	Dark Brown	Loamy Sand	Stones	Vegetation
20682288	TPBP123	0.50 - 0.50	Dark Brown	Loamy Sand	Stones	Vegetation
20682295	TPBP123	1.50 - 1.50	Dark Brown	Clay	None	None
20682223	TPBP144	1.80 - 1.80	Dark Brown	Sandy Clay	Stones	Vegetation
20682352	TPBP144	0.10 - 0.10	Dark Brown	Loamy Sand	Concrete/Aggregate	Stones
20682359	TPBP144	0.90 - 0.90	Dark Brown	Loamy Sand	Crushed Brick	Stones
20682367	TPBP144	1.40 - 1.40	Dark Brown	Concrete	Stones	None

These descriptions are only intended to act as a cross check if sample identities are questioned, and to provide a log of sample matrices with respect to MCERTS validation. They are not intended as full geological descriptions.

We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally ocurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample.

Other coarse granular materials such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

Validated

CERTIFICATE OF ANALYSIS

SDG:	190909-23	**Client Reference:**		**Report Number:**	522124
Location:	Llanwern	**Order Number:**	LLA663	**Superseded Report:**	

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-3+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	TPBP120	TPBP120	TPBP120	TPBP120	TPBP121	TPBP121
			Depth (m)	0.10 - 0.10	0.90 - 0.90	1.60 - 1.60	1.90 - 1.90	0.20 - 0.20	0.50 - 0.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	05/09/2019	05/09/2019	05/09/2019	05/09/2019	05/09/2019	05/09/2019
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	09/09/2019	09/09/2019	09/09/2019	09/09/2019	09/09/2019	09/09/2019
			SDG Ref	190909-23	190909-23	190909-23	190909-23	190909-23	190909-23
			Lab Sample No.(s)	20682231	20682238	20682245	20682252	20682259	20682266
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		7.3	7.9	13	35	4.6	5.9
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	<12 M	<12 M	184 M	<12 M	<12 M
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M
Sulphur, Total	<0.02 %	TM132		0.147	0.103	0.216	0.124	0.243	0.243
Sulphate, Total potential	<0.06 %	TM132		0.441	0.309	0.648	0.372	0.729	0.729
Soil Organic Matter (SOM)	<0.35 %	TM132		1.14 #	3.28 #	2.19 #	5.17 #	1.84 #	2.84 #
pH	1 pH Units	TM133		9.03 M	8.3 M	8.01 M	6.81 M	9.18 M	8.98 M
Cyanide, Total	<1 mg/kg	TM153		1.5 M	9.23 M	12.8 M	1.22 M	2.3 M	1.31 M
Cyanide, Free	<1 mg/kg	TM153		<1 M	<1 M	<1 M	<1 M	<1 M	<1 M
Arsenic	<0.6 mg/kg	TM181		16.1 M	14.2 M	9.69 M	14 M	19.5 M	15.9 M
Cadmium	<0.02 mg/kg	TM181		0.218 M	0.023 M	0.108 M	0.139 M	<0.02 M	<0.02 M
Chromium	<0.9 mg/kg	TM181		9.84 M	21.5 M	17.6 M	36.9 M	16.6 M	43.2 M
Copper	<1.4 mg/kg	TM181		21.5 M	29.6 M	27.8 M	16.4 M	42.8 M	46.1 M
Iron	<1000 mg/kg	TM181		18700 #	26000 #	21800 #	23800 #	71000 #	73500 #
Lead	<0.7 mg/kg	TM181		33.7 M	28.7 M	24.1 M	34.9 M	40.9 M	50.5 M
Manganese	<0.13 mg/kg	TM181		1040 M	766 M	479 M	290 M	4200 M	5490 M
Mercury	<0.14 mg/kg	TM181		<0.14 M	<0.14 M	<0.14 M	<0.14 M	<0.14 M	<0.14 M
Nickel	<0.2 mg/kg	TM181		9.51 M	34.5 M	24.7 M	25.3 M	11.5 M	16.8 M
Selenium	<1 mg/kg	TM181		<1 #	<1 #	<1 #	<1 #	<1 #	1.79 #
Vanadium	<0.2 mg/kg	TM181		20.5 #	39.2 #	31.6 #	54 #	29.8 #	60.3 #
Zinc	<1.9 mg/kg	TM181		114 M	111 M	78.5 M	121 M	109 M	234 M
Sulphate, acid soluble (total)	<0.02 %	TM221		0.32	0.0746	0.159	0.0968	0.291	0.284
Water Soluble Sulphate as SO4 2:1 Extract	<0.004 g/l	TM243		0.0948 M	0.0722 M	0.108 M	0.0369 M	0.107 M	0.113 M
Soluble Sulphate 2:1 extract as SO4 BRE	<0.004 g/l	TM243		0.0948 M	0.0722 M	0.108 M	0.0369 M	0.107 M	0.113 M

Validated

CERTIFICATE OF ANALYSIS

SDG:	190909-23	**Client Reference:**		**Report Number:**	522124
Location:	Llanwern	**Order Number:**	LLA663	**Superseded Report:**	

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-3+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	TPBP121	TPBP121	TPBP122	TPBP122	TPBP122	TPBP123
			Depth (m)	1.80 - 1.80	2.00 - 2.00	0.20 - 0.20	1.00 - 1.00	1.80 - 1.80	0.20 - 0.20
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	05/09/2019	05/09/2019	05/09/2019	05/09/2019	05/09/2019	05/09/2019
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	09/09/2019	09/09/2019	09/09/2019	09/09/2019	09/09/2019	09/09/2019
			SDG Ref	190909-23	190909-23	190909-23	190909-23	190909-23	190909-23
			Lab Sample No.(s)	20682274	20682281	20682329	20682336	20682343	20682204
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		8.3	30	7.1	13	32	6.4
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	223 M	<12 M	22.7 M	209 M	<12 M
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	0.046 M	<0.01 M	<0.01 M
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M	<0.015 M	0.023 M	<0.015 M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 M	<0.035 M	0.069 M	<0.035 M	<0.035 M
Sulphur, Total	<0.02 %	TM132		0.164	0.0488	0.246	0.478	0.0506	0.188
Sulphate, Total potential	<0.06 %	TM132		0.492	0.146	0.738	1.43	0.152	0.564
Soil Organic Matter (SOM)	<0.35 %	TM132		2.48 #	5.22 #	1.31 #	11.4 #	5.79 #	2.14 #
pH	1 pH Units	TM133		8.36 M	7.1 M	8.56 M	7.47 M	7.07 M	9.19 M
Cyanide, Total	<1 mg/kg	TM153		5.85 M	<1 M	2.06 M	2.76 M	<1 M	<1 M
Cyanide, Free	<1 mg/kg	TM153		<1 M	<1 M	<1 M	<1 M	<1 M	<1 M
Arsenic	<0.6 mg/kg	TM181		10.5 M	12.6 M	11 M	9.66 M	13.4 M	9.42 M
Cadmium	<0.02 mg/kg	TM181		0.22 M	<0.02 M	<0.02 M	0.0643 M	<0.02 M	0.0729 M
Chromium	<0.9 mg/kg	TM181		14 M	35.3 M	24.9 M	29.8 M	34.5 M	9.11 M
Copper	<1.4 mg/kg	TM181		20.4 M	14 M	19.6 M	26 M	17 M	16.7 M
Iron	<1000 mg/kg	TM181		25100 #	16800 #	31500 #	17800 #	20600 #	35600 #
Lead	<0.7 mg/kg	TM181		21.2 M	34 M	38.8 M	19.7 M	38.5 M	56 M
Manganese	<0.13 mg/kg	TM181		1190 M	274 M	3810 M	1230 M	358 M	1900 M
Mercury	<0.14 mg/kg	TM181		<0.14 M	<0.14 M	0.407 M	<0.14 M	<0.14 M	0.648 M
Nickel	<0.2 mg/kg	TM181		18.2 M	22.9 M	19.8 M	18.3 M	24.6 M	11.9 M
Selenium	<1 mg/kg	TM181		<1 #	<1 #	6.18 #	1.95 #	<1 #	<1 #
Vanadium	<0.2 mg/kg	TM181		34.2 #	49 #	31.1 #	90.1 #	49.7 #	22.4 #
Zinc	<1.9 mg/kg	TM181		85.9 M	98.1 M	87.5 M	54.8 M	115 M	82.8 M
Sulphate, acid soluble (total)	<0.02 %	TM221		0.323	0.0457	1	0.165	0.0488	0.327
Water Soluble Sulphate as SO4 2:1 Extract	<0.004 g/l	TM243		0.17 M	0.0364 M	0.193 M	0.246 M	0.0116 M	0.172 M
Soluble Sulphate 2:1 extract as SO4 BRE	<0.004 g/l	TM243		0.17 M	0.0364 M	0.193 M	0.246 M	0.0116 M	0.172 M
Asbestos Quantification - Gravimetric - %	<0.001 %	TM304		<0.001 #		0.0119 #			
Asbestos Quantification - PCOM Evaluation - %	<0.001 %	TM304		<0.001 #		<0.001 #			
Additional Asbestos Components (Using TM048)		TM304		None #		None #			
Analysts Comments		TM304		N/C		N/C			
Asbestos Quantification - Total - %	<0.001 %	TM304		<0.001 #		0.0125 #			

Validated

CERTIFICATE OF ANALYSIS

SDG:	190909-23	**Client Reference:**		**Report Number:**	522124
Location:	Llanwern	**Order Number:**	LLA663	**Superseded Report:**	

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-3+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	TPBP123	TPBP123	TPBP144	TPBP144	TPBP144	TPBP144
			Depth (m)	0.50 - 0.50	1.50 - 1.50	0.10 - 0.10	0.90 - 0.90	1.40 - 1.40	1.80 - 1.80
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	05/09/2019	05/09/2019	05/09/2019	05/09/2019	05/09/2019	05/09/2019
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	09/09/2019	09/09/2019	09/09/2019	09/09/2019	09/09/2019	09/09/2019
			SDG Ref	190909-23	190909-23	190909-23	190909-23	190909-23	190909-23
			Lab Sample No.(s)	20682288	20682295	20682352	20682359	20682367	20682223
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		8.8	24	8.6	8.9	11	25
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	227 M	<12 M	<12 M	<12 #	130 M
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 #	<0.01 M
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 #	<0.01 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 #	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 #	<0.035 M
Sulphur, Total	<0.02 %	TM132		0.115	0.035	0.151	0.085	0.174	0.0258
Sulphate, Total potential	<0.06 %	TM132		0.345	0.105	0.453	0.255	0.522	0.0774
Soil Organic Matter (SOM)	<0.35 %	TM132		2.19 #	2.17 #	1.19 #	2.05 #	1.57 #	2.53 #
pH	1 pH Units	TM133		8.91 M	7.25 M	8.91 M	8.68 M	8.19 #	8.27 M
Cyanide, Total	<1 mg/kg	TM153		<1 M	<1 M	<1 M	<1 M	1.29 #	<1 M
Cyanide, Free	<1 mg/kg	TM153		<1 M	<1 M	<1 M	<1 M	<1 #	<1 M
Arsenic	<0.6 mg/kg	TM181		8.89 M	17.1 M	14.1 M	8.02 M	7.22 #	10.7 M
Cadmium	<0.02 mg/kg	TM181		0.168 M	<0.02 M	0.021 M	<0.02 M	<0.02 #	<0.02 M
Chromium	<0.9 mg/kg	TM181		28.9 M	33.7 M	14.1 M	9.25 M	13.4 #	29.1 M
Copper	<1.4 mg/kg	TM181		31.9 M	12.4 M	15.2 M	23.2 M	29.7 #	10.5 M
Iron	<1000 mg/kg	TM181		26600 #	38800 #	34100 #	28500 #	16900 #	28200 #
Lead	<0.7 mg/kg	TM181		36.8 M	25.4 M	37.2 M	17.5 M	17.1 #	25.9 M
Manganese	<0.13 mg/kg	TM181		1220 M	745 M	2470 M	724 M	377 #	499 M
Mercury	<0.14 mg/kg	TM181		<0.14 M	<0.14 M	<0.14 M	<0.14 M	<0.14 #	<0.14 M
Nickel	<0.2 mg/kg	TM181		42 M	34.3 M	15.8 M	23.1 M	22.6 #	28.3 M
Selenium	<1 mg/kg	TM181		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
Vanadium	<0.2 mg/kg	TM181		57.8 #	55.4 #	42.3 #	27.8 #	22.3 #	45.7 #
Zinc	<1.9 mg/kg	TM181		113 M	105 M	129 M	46.8 M	38 #	98 M
Sulphate, acid soluble (total)	<0.02 %	TM221		0.272	0.0243	0.589	0.0899	0.0896	0.0521
Water Soluble Sulphate as SO4 2:1 Extract	<0.004 g/l	TM243		0.0408 M	0.113 M	0.0939 M	0.0513 M	0.148 #	0.0526 M
Soluble Sulphate 2:1 extract as SO4 BRE	<0.004 g/l	TM243		0.0408 M	0.113 M	0.0939 M	0.0513 M	0.148 #	0.0526 M

Validated

CERTIFICATE OF ANALYSIS

SDG:	190909-23	**Client Reference:**		**Report Number:**	522124
Location:	Llanwern	**Order Number:**	LLA663	**Superseded Report:**	

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-3+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	TPBP120	TPBP120	TPBP120	TPBP120	TPBP121	TPBP121
			Depth (m)	0.10 - 0.10	0.90 - 0.90	1.60 - 1.60	1.90 - 1.90	0.20 - 0.20	0.50 - 0.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	05/09/2019	05/09/2019	05/09/2019	05/09/2019	05/09/2019	05/09/2019
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	09/09/2019	09/09/2019	09/09/2019	09/09/2019	09/09/2019	09/09/2019
			SDG Ref	190909-23	190909-23	190909-23	190909-23	190909-23	190909-23
			Lab Sample No.(s)	20682231	20682238	20682245	20682252	20682259	20682266
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		87.9	90.6	90.2	108	88.9	84.2
Acenaphthene-d10 % recovery**	%	TM218		87.9	92.1	90.6	101	87.4	86.6
Phenanthrene-d10 % recovery**	%	TM218		88.2	92.6	91.8	104	89.1	84.7
Chrysene-d12 % recovery**	%	TM218		74.2	77.3	80.3	103	80.3	98.3
Perylene-d12 % recovery**	%	TM218		72.9	72.4	77.3	98.3	81	95.5
Naphthalene	<0.009 mg/kg	TM218		0.13 M	1.98 M	1.82 M	9.54 M	0.25 M	0.239 M
Acenaphthylene	<0.012 mg/kg	TM218		<0.06 M	0.0528 M	0.0381 M	0.0487 M	0.158 M	0.15 M
Acenaphthene	<0.008 mg/kg	TM218		0.0569 M	0.0784 M	0.078 M	0.0262 M	0.0829 M	0.206 M
Fluorene	<0.01 mg/kg	TM218		<0.05 M	0.0459 M	0.0457 M	0.0552 M	0.139 M	0.294 M
Phenanthrene	<0.015 mg/kg	TM218		0.264 M	0.119 M	0.0542 M	0.271 M	2.35 M	4.39 M
Anthracene	<0.016 mg/kg	TM218		<0.08 M	0.0291 M	<0.016 M	0.0752 M	0.826 M	2 M
Fluoranthene	<0.017 mg/kg	TM218		0.796 M	0.194 M	0.053 M	0.45 M	11.6 M	26.7 M
Pyrene	<0.015 mg/kg	TM218		0.656 M	0.171 M	0.0416 M	0.333 M	9.45 M	23.4 M
Benz(a)anthracene	<0.014 mg/kg	TM218		0.352 M	0.161 M	0.0249 M	0.219 M	5.65 M	17.6 M
Chrysene	<0.01 mg/kg	TM218		0.361 M	0.163 M	0.0293 M	0.249 M	5.53 M	17.1 M
Benzo(b)fluoranthene	<0.015 mg/kg	TM218		0.721 M	0.404 M	0.0394 M	0.363 M	9.95 M	27 M
Benzo(k)fluoranthene	<0.014 mg/kg	TM218		0.229 M	0.106 M	<0.014 M	0.108 M	2.66 M	8.79 M
Benzo(a)pyrene	<0.015 mg/kg	TM218		0.435 M	0.331 M	0.0206 M	0.182 M	6.04 M	16.7 M
Indeno(1,2,3-cd)pyrene	<0.018 mg/kg	TM218		0.59 M	0.439 M	0.0229 M	0.185 M	7.12 M	18 M
Dibenzo(a,h)anthracene	<0.023 mg/kg	TM218		<0.115 M	0.0714 M	<0.023 M	<0.023 M	0.724 M	2.93 M
Benzo(g,h,i)perylene	<0.024 mg/kg	TM218		0.442 M	0.345 M	<0.024 M	0.169 M	4.92 M	12.9 M
PAH, Total Detected USEPA 16	<0.118 mg/kg	TM218		5.03	4.69	2.27	12.3	67.4	178

Validated

CERTIFICATE OF ANALYSIS

SDG:	190909-23	**Client Reference:**		**Report Number:**	522124
Location:	Llanwern	**Order Number:**	LLA663	**Superseded Report:**	

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-3+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	TPBP121	TPBP121	TPBP122	TPBP122	TPBP122	TPBP123
			Depth (m)	1.80 - 1.80	2.00 - 2.00	0.20 - 0.20	1.00 - 1.00	1.80 - 1.80	0.20 - 0.20
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	05/09/2019	05/09/2019	05/09/2019	05/09/2019	05/09/2019	05/09/2019
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	09/09/2019	09/09/2019	09/09/2019	09/09/2019	09/09/2019	09/09/2019
			SDG Ref	190909-23	190909-23	190909-23	190909-23	190909-23	190909-23
			Lab Sample No.(s)	20682274	20682281	20682329	20682336	20682343	20682204
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		85.3	88	83.7	79.8	84	86.9
Acenaphthene-d10 % recovery**	%	TM218		87.7	89.8	88.3	79.7	83.7	89.2
Phenanthrene-d10 % recovery**	%	TM218		88.3	88.2	91.7	78.5	84.8	91.2
Chrysene-d12 % recovery**	%	TM218		93.1	89.3	87.5	75.9	85.5	96.3
Perylene-d12 % recovery**	%	TM218		90.8	89.4	92.2	73	91.3	92.6
Naphthalene	<0.009 mg/kg	TM218		0.366 M	<0.009 M	0.604 M	0.656 M	0.294 M	0.267 M
Acenaphthylene	<0.012 mg/kg	TM218		0.0366 M	<0.012 M	0.337 M	<0.012 M	<0.012 M	0.0485 M
Acenaphthene	<0.008 mg/kg	TM218		0.0175 M	<0.008 M	0.293 M	0.0331 M	<0.008 M	0.162 M
Fluorene	<0.01 mg/kg	TM218		0.0222 M	<0.01 M	0.0738 M	0.0243 M	<0.01 M	0.118 M
Phenanthrene	<0.015 mg/kg	TM218		0.316 M	<0.015 M	0.17 M	0.175 M	<0.015 M	1.85 M
Anthracene	<0.016 mg/kg	TM218		0.081 M	<0.016 M	0.0404 M	<0.016 M	<0.016 M	0.385 M
Fluoranthene	<0.017 mg/kg	TM218		1.17 M	0.0281 M	0.296 M	0.151 M	<0.017 M	4.08 M
Pyrene	<0.015 mg/kg	TM218		0.926 M	<0.015 M	0.258 M	0.102 M	<0.015 M	3.18 M
Benz(a)anthracene	<0.014 mg/kg	TM218		0.741 M	<0.014 M	0.156 M	0.0311 M	<0.014 M	2.03 M
Chrysene	<0.01 mg/kg	TM218		0.741 M	0.0163 M	0.151 M	0.0492 M	<0.01 M	1.89 M
Benzo(b)fluoranthene	<0.015 mg/kg	TM218		1.23 M	0.0289 M	0.379 M	0.053 M	<0.015 M	3 M
Benzo(k)fluoranthene	<0.014 mg/kg	TM218		0.434 M	<0.014 M	0.111 M	<0.014 M	<0.014 M	1.1 M
Benzo(a)pyrene	<0.015 mg/kg	TM218		0.741 M	<0.015 M	0.164 M	<0.015 M	<0.015 M	1.78 M
Indeno(1,2,3-cd)pyrene	<0.018 mg/kg	TM218		0.893 M	<0.018 M	0.192 M	<0.018 M	<0.018 M	2.08 M
Dibenzo(a,h)anthracene	<0.023 mg/kg	TM218		0.0903 M	<0.023 M	<0.023 M	<0.023 M	<0.023 M	0.348 M
Benzo(g,h,i)perylene	<0.024 mg/kg	TM218		0.607 M	<0.024 M	0.182 M	<0.024 M	<0.024 M	1.55 M
PAH, Total Detected USEPA 16	<0.118 mg/kg	TM218		8.42	<0.118	3.41	1.28	0.294	23.9

Validated

CERTIFICATE OF ANALYSIS

SDG:	190909-23	**Client Reference:**		**Report Number:**	522124
Location:	Llanwern	**Order Number:**	LLA663	**Superseded Report:**	

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-3+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	TPBP123	TPBP123	TPBP144	TPBP144	TPBP144	TPBP144
			Depth (m)	0.50 - 0.50	1.50 - 1.50	0.10 - 0.10	0.90 - 0.90	1.40 - 1.40	1.80 - 1.80
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	05/09/2019	05/09/2019	05/09/2019	05/09/2019	05/09/2019	05/09/2019
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	09/09/2019	09/09/2019	09/09/2019	09/09/2019	09/09/2019	09/09/2019
			SDG Ref	190909-23	190909-23	190909-23	190909-23	190909-23	190909-23
			Lab Sample No.(s)	20682288	20682295	20682352	20682359	20682367	20682223
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		88.5	86.2	105	81.8	91.1	83.1
Acenaphthene-d10 % recovery**	%	TM218		90.1	84.8	101	80.6	93	81.5
Phenanthrene-d10 % recovery**	%	TM218		89.8	88.1	102	81.1	94.2	82.6
Chrysene-d12 % recovery**	%	TM218		92	88.1	95.7	78.6	78.4	83.3
Perylene-d12 % recovery**	%	TM218		88.9	79.9	94.1	75.9	71.8	89.6
Naphthalene	<0.009 mg/kg	TM218		0.778 M	<0.009 M	0.443 M	0.1 M	0.568 #	0.376 M
Acenaphthylene	<0.012 mg/kg	TM218		0.0191 M	<0.012 M	0.28 M	0.0306 M	0.0164 #	<0.012 M
Acenaphthene	<0.008 mg/kg	TM218		0.0188 M	<0.008 M	0.0505 M	<0.008 M	<0.008 #	<0.008 M
Fluorene	<0.01 mg/kg	TM218		0.0188 M	<0.01 M	0.112 M	<0.01 M	0.0113 #	<0.01 M
Phenanthrene	<0.015 mg/kg	TM218		0.044 M	<0.015 M	0.887 M	0.0655 M	0.0544 #	<0.015 M
Anthracene	<0.016 mg/kg	TM218		<0.016 M	<0.016 M	0.275 M	<0.016 M	<0.016 #	<0.016 M
Fluoranthene	<0.017 mg/kg	TM218		0.0499 M	<0.017 M	1.74 M	0.1 M	0.0338 #	<0.017 M
Pyrene	<0.015 mg/kg	TM218		0.0416 M	<0.015 M	1.33 M	0.0763 M	0.0243 #	<0.015 M
Benz(a)anthracene	<0.014 mg/kg	TM218		0.0369 M	<0.014 M	1.02 M	0.0678 M	0.0163 #	<0.014 M
Chrysene	<0.01 mg/kg	TM218		0.0524 M	<0.01 M	1.08 M	0.0854 M	0.018 #	<0.01 M
Benzo(b)fluoranthene	<0.015 mg/kg	TM218		0.0806 M	<0.015 M	1.83 M	0.128 M	0.0293 #	<0.015 M
Benzo(k)fluoranthene	<0.014 mg/kg	TM218		0.0234 M	<0.014 M	0.633 M	0.0441 M	<0.014 #	<0.014 M
Benzo(a)pyrene	<0.015 mg/kg	TM218		0.0351 M	<0.015 M	0.967 M	0.0577 M	<0.015 #	<0.015 M
Indeno(1,2,3-cd)pyrene	<0.018 mg/kg	TM218		0.0651 M	<0.018 M	0.981 M	0.0733 M	<0.018 #	<0.018 M
Dibenzo(a,h)anthracene	<0.023 mg/kg	TM218		<0.023 M	<0.023 M	0.182 M	<0.023 M	<0.023 #	<0.023 M
Benzo(g,h,i)perylene	<0.024 mg/kg	TM218		0.0426 M	<0.024 M	0.899 M	0.0495 M	<0.024 #	<0.024 M
PAH, Total Detected USEPA 16	<0.118 mg/kg	TM218		1.31	<0.118	12.7	0.878	0.772	0.376

Validated

CERTIFICATE OF ANALYSIS

SDG:	190909-23	**Client Reference:**		**Report Number:**	522124
Location:	Llanwern	**Order Number:**	LLA663	**Superseded Report:**	

TPH CWG (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-3+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	TPBP120	TPBP120	TPBP120	TPBP120	TPBP121	TPBP121
			Depth (m)	0.10 - 0.10	0.90 - 0.90	1.60 - 1.60	1.90 - 1.90	0.20 - 0.20	0.50 - 0.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	05/09/2019	05/09/2019	05/09/2019	05/09/2019	05/09/2019	05/09/2019
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	09/09/2019	09/09/2019	09/09/2019	09/09/2019	09/09/2019	09/09/2019
			SDG Ref	190909-23	190909-23	190909-23	190909-23	190909-23	190909-23
			Lab Sample No.(s)	20682231	20682238	20682245	20682252	20682259	20682266
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		93.8	78.6	92.9	84.2	76	87.2
GRO TOT (Moisture Corrected)	<0.1 mg/kg	TM089		<0.2 M	0.707 M	3.11 M	37.1 M	<0.2 M	<0.2 M
Aliphatics >C5-C6	<0.01 mg/kg	TM089		<0.02	<0.02	0.038	0.143	<0.02	<0.02
Aliphatics >C6-C8	<0.01 mg/kg	TM089		<0.02	0.05	0.0736	1.07	<0.02	<0.02
Aliphatics >C8-C10	<0.01 mg/kg	TM089		<0.02	0.088	0.348	4.99	<0.02	<0.02
Aliphatics >C10-C12	<0.01 mg/kg	TM089		<0.02	0.237	1.26	15.6	<0.02	<0.02
Aliphatics >C12-C16	<0.1 mg/kg	TM173		0.659	2.28	4.2	<0.1	1.49	1.53
Aliphatics >C16-C21	<0.1 mg/kg	TM173		3.38	3.3	4.07	<0.1	3.92	8.18
Aliphatics >C21-C35	<0.1 mg/kg	TM173		19.3	4.78	3.55	<0.1	36.3	119
Aliphatics >C35-C44	<0.1 mg/kg	TM173		7.17	1.1	0.969	<0.1	20.2	27.7
Total Aliphatics >C12-C44	<0.1 mg/kg	TM173		30.5	11.5	12.8	<0.1	61.9	157
Aromatics >EC5-EC7	<0.01 mg/kg	TM089		<0.02	0.0815	0.258	1.54	<0.02	<0.02
Aromatics >EC7-EC8	<0.01 mg/kg	TM089		<0.02	0.0239	0.0621	<0.02	<0.02	<0.02
Aromatics >EC8-EC10	<0.01 mg/kg	TM089		<0.02	0.0586	0.232	3.33	<0.02	<0.02
Aromatics >EC10-EC12	<0.01 mg/kg	TM089		<0.02	0.157	0.838	10.4	<0.02	<0.02
Aromatics >EC12-EC16	<0.1 mg/kg	TM173		0.603	4.38	6.21	0.322	1.5	2.23
Aromatics >EC16-EC21	<0.1 mg/kg	TM173		2.61	7.38	11.3	0.242	23.3	60.9
Aromatics >EC21-EC35	<0.1 mg/kg	TM173		14.4	12.3	13.9	11.4	116	241
Aromatics >EC35-EC44	<0.1 mg/kg	TM173		10.4	2.9	1.55	1.07	64	99.8
Aromatics >EC40-EC44	<0.1 mg/kg	TM173		4.36	0.779	0.366	<0.1	26.8	37.5
Total Aromatics >EC12-EC44	<0.1 mg/kg	TM173		28	26.9	33	13	205	404
Total Aliphatics & Aromatics >C5-C44	<0.1 mg/kg	TM173		58.6	39.1	48.9	50.1	267	561

Validated

CERTIFICATE OF ANALYSIS

SDG:	190909-23	**Client Reference:**		**Report Number:**	522124
Location:	Llanwern	**Order Number:**	LLA663	**Superseded Report:**	

TPH CWG (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-3+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	TPBP121	TPBP121	TPBP122	TPBP122	TPBP122	TPBP123
			Depth (m)	1.80 - 1.80	2.00 - 2.00	0.20 - 0.20	1.00 - 1.00	1.80 - 1.80	0.20 - 0.20
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	05/09/2019	05/09/2019	05/09/2019	05/09/2019	05/09/2019	05/09/2019
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	09/09/2019	09/09/2019	09/09/2019	09/09/2019	09/09/2019	09/09/2019
			SDG Ref	190909-23	190909-23	190909-23	190909-23	190909-23	190909-23
			Lab Sample No.(s)	20682274	20682281	20682329	20682336	20682343	20682204
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		89.7	90.9	85.5	76.1	85	88.7
GRO TOT (Moisture Corrected)	<0.1 mg/kg	TM089		<0.2 M	<0.2 M	<0.2 M	27.9 M	9.13 M	<0.2 M
Aliphatics >C5-C6	<0.01 mg/kg	TM089		<0.02	<0.02	<0.02	0.265	0.0474	<0.02
Aliphatics >C6-C8	<0.01 mg/kg	TM089		<0.02	<0.02	<0.02	0.842	0.235	<0.02
Aliphatics >C8-C10	<0.01 mg/kg	TM089		0.0305	<0.02	<0.02	1.45	0.855	<0.02
Aliphatics >C10-C12	<0.01 mg/kg	TM089		0.0393	<0.02	<0.02	7	3.63	<0.02
Aliphatics >C12-C16	<0.1 mg/kg	TM173		<0.1	<0.1	11.8	6.5	<0.1	1.51
Aliphatics >C16-C21	<0.1 mg/kg	TM173		2.22	<0.1	32.1	14.6	<0.1	9.35
Aliphatics >C21-C35	<0.1 mg/kg	TM173		28.1	0.454	33.3	41.9	3.83	35.7
Aliphatics >C35-C44	<0.1 mg/kg	TM173		5.49	<0.1	4.45	9.1	<0.1	7.56
Total Aliphatics >C12-C44	<0.1 mg/kg	TM173		35.8	0.454	81.6	72.1	3.83	54.1
Aromatics >EC5-EC7	<0.01 mg/kg	TM089		0.0349	<0.02	<0.02	12.6	1.38	<0.02
Aromatics >EC7-EC8	<0.01 mg/kg	TM089		<0.02	<0.02	<0.02	0.163	<0.02	<0.02
Aromatics >EC8-EC10	<0.01 mg/kg	TM089		0.0207	<0.02	<0.02	0.964	0.57	<0.02
Aromatics >EC10-EC12	<0.01 mg/kg	TM089		0.0262	<0.02	<0.02	4.67	2.42	<0.02
Aromatics >EC12-EC16	<0.1 mg/kg	TM173		3.03	<0.1	5.28	6	0.133	10.3
Aromatics >EC16-EC21	<0.1 mg/kg	TM173		7.63	0.605	18	11.7	0.447	180
Aromatics >EC21-EC35	<0.1 mg/kg	TM173		31.4	25.8	67.2	25	21	299
Aromatics >EC35-EC44	<0.1 mg/kg	TM173		10.3	3	14	7.1	2.81	80.7
Aromatics >EC40-EC44	<0.1 mg/kg	TM173		3.29	0.356	4.81	3.06	0.555	26.4
Total Aromatics >EC12-EC44	<0.1 mg/kg	TM173		52.3	29.4	104	49.8	24.4	570
Total Aliphatics & Aromatics >C5-C44	<0.1 mg/kg	TM173		88.3	29.8	186	150	37.3	624

CERTIFICATE OF ANALYSIS

SDG:	190909-23	**Client Reference:**		**Report Number:**	522124
Location:	Llanwern	**Order Number:**	LLA663	**Superseded Report:**	

TPH CWG (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-3+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	TPBP123	TPBP123	TPBP144	TPBP144	TPBP144	TPBP144
			Depth (m)	0.50 - 0.50	1.50 - 1.50	0.10 - 0.10	0.90 - 0.90	1.40 - 1.40	1.80 - 1.80
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	05/09/2019	05/09/2019	05/09/2019	05/09/2019	05/09/2019	05/09/2019
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	09/09/2019	09/09/2019	09/09/2019	09/09/2019	09/09/2019	09/09/2019
			SDG Ref	190909-23	190909-23	190909-23	190909-23	190909-23	190909-23
			Lab Sample No.(s)	20682288	20682295	20682352	20682359	20682367	20682223
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		99.3	93.2	95	107	90	95
GRO TOT (Moisture Corrected)	<0.1 mg/kg	TM089		<0.2 M	<0.2 M	<0.2 M	<0.2 M	1.05 #	13.5 M
Aliphatics >C5-C6	<0.01 mg/kg	TM089		<0.02	<0.02	<0.02	<0.02	<0.02	0.0871
Aliphatics >C6-C8	<0.01 mg/kg	TM089		<0.02	<0.02	<0.02	<0.02	0.0246	0.434
Aliphatics >C8-C10	<0.01 mg/kg	TM089		<0.02	<0.02	<0.02	0.0307	0.0784	1.03
Aliphatics >C10-C12	<0.01 mg/kg	TM089		0.0362	<0.02	<0.02	0.0746	0.469	6.59
Aliphatics >C12-C16	<0.1 mg/kg	TM173		<0.1	0.179	0.11	<0.1	<0.1	0.311
Aliphatics >C16-C21	<0.1 mg/kg	TM173		<0.1	0.536	0.802	<0.1	<0.1	0.955
Aliphatics >C21-C35	<0.1 mg/kg	TM173		5.59	2.88	11.9	<0.1	<0.1	4.96
Aliphatics >C35-C44	<0.1 mg/kg	TM173		1.93	0.973	3.69	<0.1	<0.1	0.969
Total Aliphatics >C12-C44	<0.1 mg/kg	TM173		7.52	4.57	16.5	<0.1	<0.1	7.19
Aromatics >EC5-EC7	<0.01 mg/kg	TM089		<0.02	<0.02	<0.02	<0.02	0.0818	0.233
Aromatics >EC7-EC8	<0.01 mg/kg	TM089		<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Aromatics >EC8-EC10	<0.01 mg/kg	TM089		<0.02	<0.02	<0.02	0.0208	0.0526	0.683
Aromatics >EC10-EC12	<0.01 mg/kg	TM089		0.0241	<0.02	<0.02	0.0494	0.312	4.4
Aromatics >EC12-EC16	<0.1 mg/kg	TM173		1.14	<0.1	0.942	<0.1	1.6	<0.1
Aromatics >EC16-EC21	<0.1 mg/kg	TM173		2.52	0.506	6.35	2.55	3.37	0.87
Aromatics >EC21-EC35	<0.1 mg/kg	TM173		9.6	7.15	32.8	18	8.23	16.3
Aromatics >EC35-EC44	<0.1 mg/kg	TM173		5.72	1.17	18.7	3.95	1.15	2.12
Aromatics >EC40-EC44	<0.1 mg/kg	TM173		1.97	0.199	7.29	1.51	0.289	0.411
Total Aromatics >EC12-EC44	<0.1 mg/kg	TM173		19	8.82	58.8	24.5	14.3	19.2
Total Aliphatics & Aromatics >C5-C44	<0.1 mg/kg	TM173		26.6	13.4	75.3	24.7	15.4	39.9

Validated

CERTIFICATE OF ANALYSIS

SDG:	190909-23	**Client Reference:**		**Report Number:**	522124
Location:	Llanwern	**Order Number:**	LLA663	**Superseded Report:**	

VOC MS (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-3+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	TPBP120	TPBP120	TPBP120	TPBP120	TPBP121	TPBP121
			Depth (m)	0.10 - 0.10	0.90 - 0.90	1.60 - 1.60	1.90 - 1.90	0.20 - 0.20	0.50 - 0.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	05/09/2019	05/09/2019	05/09/2019	05/09/2019	05/09/2019	05/09/2019
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	09/09/2019	09/09/2019	09/09/2019	09/09/2019	09/09/2019	09/09/2019
			SDG Ref	190909-23	190909-23	190909-23	190909-23	190909-23	190909-23
			Lab Sample No.(s)	20682231	20682238	20682245	20682252	20682259	20682266
			AGS Reference						
Dibromofluoromethane**	%	TM116		106	108	112	107	99.7	102
Toluene-d8**	%	TM116		97.4	98.3	97.5	96.3	98.1	96
4-Bromofluorobenzene**	%	TM116		95	91.3	94.8	93.5	89.6	92.2
Methyl Tertiary Butyl Ether	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M
Benzene	<0.009 mg/kg	TM116		<0.09 M	0.632 M	0.428 M	1.52 M	<0.09 M	<0.09 M
Toluene	<0.007 mg/kg	TM116		<0.07 M	0.145 M	0.0976 M	<0.07 M	<0.07 M	<0.07 M
Ethylbenzene	<0.004 mg/kg	TM116		<0.04 M	<0.04 M	<0.04 M	0.154 M	<0.04 M	<0.04 M
p/m-Xylene	<0.01 mg/kg	TM116		<0.1 #	<0.1 #	<0.1 #	1.25 #	<0.1 #	<0.1 #
o-Xylene	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M
Naphthalene	<0.013 mg/kg	TM116		<0.13 M	0.224 M	0.361 M	9.72 M	<0.13 M	<0.13 M
Sum of Detected Xylenes	<0.02 mg/kg	TM116		<0.2	<0.2	<0.2	1.25	<0.2	<0.2
Sum of BTEX	<0.04 mg/kg	TM116		<0.4	0.777	0.525	2.92	<0.4	<0.4

Validated

CERTIFICATE OF ANALYSIS

SDG:	190909-23	**Client Reference:**		**Report Number:**	522124
Location:	Llanwern	**Order Number:**	LLA663	**Superseded Report:**	

VOC MS (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-3+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	TPBP121	TPBP121	TPBP122	TPBP122	TPBP122	TPBP123
			Depth (m)	1.80 - 1.80	2.00 - 2.00	0.20 - 0.20	1.00 - 1.00	1.80 - 1.80	0.20 - 0.20
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	05/09/2019	05/09/2019	05/09/2019	05/09/2019	05/09/2019	05/09/2019
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	09/09/2019	09/09/2019	09/09/2019	09/09/2019	09/09/2019	09/09/2019
			SDG Ref	190909-23	190909-23	190909-23	190909-23	190909-23	190909-23
			Lab Sample No.(s)	20682274	20682281	20682329	20682336	20682343	20682204
			AGS Reference						
Dibromofluoromethane**	%	TM116		104	103	105	108	107	104
Toluene-d8**	%	TM116		97.2	98.9	97.9	95.6	95.8	98.2
4-Bromofluorobenzene**	%	TM116		91.5	95.7	93.9	86.8	94.1	95.4
Methyl Tertiary Butyl Ether	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M
Benzene	<0.009 mg/kg	TM116		0.142 M	<0.09 M	<0.09 M	8.57 M	2.24 M	<0.09 M
Toluene	<0.007 mg/kg	TM116		<0.07 M	<0.07 M	<0.07 M	0.37 M	<0.07 M	<0.07 M
Ethylbenzene	<0.004 mg/kg	TM116		<0.04 M	<0.04 M	<0.04 M	0.297 M	0.085 M	<0.04 M
p/m-Xylene	<0.01 mg/kg	TM116		<0.1 #	<0.1 #	<0.1 #	0.402 #	0.329 #	<0.1 #
o-Xylene	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 M	0.129 M	0.211 M	<0.1 M
Naphthalene	<0.013 mg/kg	TM116		<0.13 M	<0.13 M	<0.13 M	0.306 M	0.212 M	0.165 M
Sum of Detected Xylenes	<0.02 mg/kg	TM116		<0.2	<0.2	<0.2	0.532	0.54	<0.2
Sum of BTEX	<0.04 mg/kg	TM116		<0.4	<0.4	<0.4	9.77	2.87	<0.4

CERTIFICATE OF ANALYSIS

SDG:	190909-23	**Client Reference:**		**Report Number:**	522124
Location:	Llanwern	**Order Number:**	LLA663	**Superseded Report:**	

VOC MS (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-3+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	TPBP123	TPBP123	TPBP144	TPBP144	TPBP144	TPBP144
			Depth (m)	0.50 - 0.50	1.50 - 1.50	0.10 - 0.10	0.90 - 0.90	1.40 - 1.40	1.80 - 1.80
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	05/09/2019	05/09/2019	05/09/2019	05/09/2019	05/09/2019	05/09/2019
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	09/09/2019	09/09/2019	09/09/2019	09/09/2019	09/09/2019	09/09/2019
			SDG Ref	190909-23	190909-23	190909-23	190909-23	190909-23	190909-23
			Lab Sample No.(s)	20682288	20682295	20682352	20682359	20682367	20682223
			AGS Reference						
Dibromofluoromethane**	%	TM116		107	104	107	105	112	104
Toluene-d8**	%	TM116		98	99.3	97.9	98.9	96.9	97.8
4-Bromofluorobenzene**	%	TM116		91.5	97.2	89.6	93.8	92.8	94.9
Methyl Tertiary Butyl Ether	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 #	<0.1 M
Benzene	<0.009 mg/kg	TM116		0.17 M	<0.09 M	<0.09 M	<0.09 M	0.215 #	0.3 M
Toluene	<0.007 mg/kg	TM116		<0.07 M	<0.07 M	<0.07 M	<0.07 M	<0.07 #	<0.07 M
Ethylbenzene	<0.004 mg/kg	TM116		<0.04 M	<0.04 M	<0.04 M	<0.04 M	<0.04 #	0.0888 M
p/m-Xylene	<0.01 mg/kg	TM116		<0.1 #	<0.1 #	<0.1 #	<0.1 #	<0.1 #	<0.1 #
o-Xylene	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 #	<0.1 M
Naphthalene	<0.013 mg/kg	TM116		2.05 M	<0.13 M	<0.13 M	<0.13 M	<0.13 #	0.651 M
Sum of Detected Xylenes	<0.02 mg/kg	TM116		<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Sum of BTEX	<0.04 mg/kg	TM116		<0.4	<0.4	<0.4	<0.4	<0.4	<0.4

CERTIFICATE OF ANALYSIS

SDG:	190909-23	**Client Reference:**		**Report Number:**	522124
Location:	Llanwern	**Order Number:**	LLA663	**Superseded Report:**	

Asbestos Identification - Solid Samples

Results Legend

#	ISO17025 accredited.
M	*m*CERTS accredited.
*	Subcontracted test.
(F)	Trigger breach confirmed
1-5&♦§@	Sample deviation (see appendix)

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthophyllite	Fibrous Tremolite	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	TPBP120 0.10 - 0.10 SOLID 05/09/2019 00:00:00 09/09/2019 13:33:00 190909-23 20682231 TM048	13/09/2019	James Richards	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	TPBP120 0.90 - 0.90 SOLID 05/09/2019 00:00:00 09/09/2019 13:33:00 190909-23 20682238 TM048	13/09/2019	Agnieszka Chelmowska	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	TPBP120 1.60 - 1.60 SOLID 05/09/2019 00:00:00 09/09/2019 13:33:00 190909-23 20682245 TM048	13/09/2019	Marcin Magdziarek	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	TPBP120 1.90 - 1.90 SOLID 05/09/2019 00:00:00 09/09/2019 13:33:00 190909-23 20682252 TM048	13/09/2019	James Richards	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	TPBP121 0.20 - 0.20 SOLID 05/09/2019 00:00:00 09/09/2019 13:33:00 190909-23 20682259 TM048	13/09/2019	Agnieszka Chelmowska	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	TPBP121 0.50 - 0.50 SOLID 05/09/2019 00:00:00 09/09/2019 13:33:00 190909-23 20682266 TM048	13/09/2019	Agnieszka Chelmowska	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	TPBP121 1.80 - 1.80 SOLID 05/09/2019 00:00:00 09/09/2019 13:33:00 190909-23 20682274 TM048	13/09/2019	Marcin Magdziarek	Loose fibres in soil	Not Detected (#)	Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	TPBP121 2.00 - 2.00 SOLID 05/09/2019 00:00:00 09/09/2019 13:33:00 190909-23 20682281 TM048	13/09/2019	Marcin Magdziarek	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected

CERTIFICATE OF ANALYSIS

SDG: 190909-23 **Client Reference:** **Report Number:** 522124
Location: Llanwern **Order Number:** LLA663 **Superseded Report:**

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthophyllite	Fibrous Tremolite	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	TPBP122 0.20 - 0.20 SOLID 05/09/2019 00:00:00 09/09/2019 13:33:00 190909-23 20682329 TM048	13/09/2019	Marcin Magdziarek	Loose fibres in soil	Not Detected (#)	Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	TPBP122 1.00 - 1.00 SOLID 05/09/2019 00:00:00 09/09/2019 13:33:00 190909-23 20682336 TM048	16/09/19	Christian Hallam	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	TPBP122 1.80 - 1.80 SOLID 05/09/2019 00:00:00 09/09/2019 13:33:00 190909-23 20682343 TM048	16/09/19	Christian Hallam	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	TPBP123 0.20 - 0.20 SOLID 05/09/2019 00:00:00 09/09/2019 13:33:00 190909-23 20682204 TM048	13/09/2019	James Richards	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	TPBP123 0.50 - 0.50 SOLID 05/09/2019 00:00:00 09/09/2019 13:33:00 190909-23 20682288 TM048	13/09/19	Christian Hallam	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	TPBP123 1.50 - 1.50 SOLID 05/09/2019 00:00:00 09/09/2019 13:33:00 190909-23 20682295 TM048	13/09/2019	James Richards	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	TPBP144 0.10 - 0.10 SOLID 05/09/2019 00:00:00 09/09/2019 13:33:00 190909-23 20682352 TM048	13/09/2019	James Richards	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	TPBP144 0.90 - 0.90 SOLID 05/09/2019 00:00:00 09/09/2019 13:33:00 190909-23 20682359 TM048	13/09/2019	James Richards	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	TPBP144 1.40 - 1.40 SOLID 05/09/2019 00:00:00 09/09/2019 13:33:00 190909-23 20682367 TM048	13/09/2019	James Richards	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected

Validated

CERTIFICATE OF ANALYSIS

SDG: 190909-23 **Client Reference:** **Report Number:** 522124
Location: Llanwern **Order Number:** LLA663 **Superseded Report:**

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthophyllite	Fibrous Tremolite	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	TPBP144 1.80 - 1.80 SOLID 05/09/2019 00:00:00 09/09/2019 13:33:00 190909-23 20682223 TM048	16/09/19	Christian Hallam	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected

Asbestos Quantification - Full

Results Legend

#	ISO17025 accredited.
M	*m*CERTS accredited.
*	Subcontracted test.
(F)	Trigger breach confirmed
1-5&+$@	Sample deviation (see appendix)

		Additional Asbestos Components	Analysts Comments	Asbestos Quantification - Gravimetric - %	Asbestos Quantification - PCOM	Asbestos Quantification - Total - %
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	TPBP121 1.80 - 1.80 SOLID 05/09/2019 00:00:00 09/09/2019 13:33:00 190909-23 20682274 TM304	None (#)	N/C	<0.001 (#)	<0.001 (#)	<0.001 (#)
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	TPBP122 0.20 - 0.20 SOLID 05/09/2019 00:00:00 09/09/2019 13:33:00 190909-23 20682329 TM304	None (#)	N/C	0.0119 (#)	<0.001 (#)	0.0125 (#)

CERTIFICATE OF ANALYSIS

SDG:	190909-23	**Client Reference:**		**Report Number:**	522124
Location:	Llanwern	**Order Number:**	LLA663	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.096	**Natural Moisture Content (%)**	6.84
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	93.6
Particle Size <4mm	>95%		

Case	
SDG	190909-23
Lab Sample Number(s)	20682204
Sampled Date	05-Sep-2019
Customer Sample Ref.	TPBP123
Depth (m)	0.20 - 0.20

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Mercury Dissolved (CVAF)	0.0000765	<0.00001	0.000765	<0.0001	-	-	-
Ammoniacal Nitrogen as N	0.0126	<0.01	0.126	<0.1	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00822	<0.0005	0.0822	<0.005	-	-	-
Free Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Phenol by HPLC (W)	<0.002	<0.002	<0.02	<0.02	-	-	-
Cresols by HPLC (W)	<0.006	<0.006	<0.06	<0.06	-	-	-
Xylenols by HPLC (W)	<0.008	<0.008	<0.08	<0.08	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Total Monohydric Phenols (W)	<0.016	<0.016	<0.16	<0.16	-	-	-
Chromium	0.00221	<0.001	0.0221	<0.01	-	-	-
Copper	0.0021	<0.0003	0.021	<0.003	-	-	-
Lead	0.000931	<0.0002	0.00931	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.000426	<0.0004	0.00426	<0.004	-	-	-
Selenium	0.00166	<0.001	0.0166	<0.01	-	-	-
Vanadium	0.0222	<0.001	0.222	<0.01	-	-	-
Zinc	0.00451	<0.001	0.0451	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.677	<0.019	6.77	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000235	<0.00001	0.000235	<0.0001	-	-	-
Acenaphthene by GCMS	0.00000534	<0.000005	0.0000534	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000298	<0.000005	0.000298	<0.00005	-	-	-
Anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000208	<0.000005	0.000208	<0.00005	-	-	-
Fluorene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.0000207	<0.000005	0.000207	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.0000194	<0.000005	0.000194	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.00000827	<0.000005	0.0000827	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.0000089	<0.000002	0.000089	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	0.00000629	<0.000005	0.0000629	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	0.000015	<0.000005	0.00015	<0.00005	-	-	-

Leach Test Information

Date Prepared	11-Sep-2019
pH (pH Units)	9.24
Conductivity (µS/cm)	93.10
Temperature (°C)	16.40
Volume Leachant (Litres)	0.894

Mcerts Certification does not apply to leachates
19/09/2019 16:52:30

16:51:33 19/09/2019

CERTIFICATE OF ANALYSIS

SDG:	190909-23	**Client Reference:**		**Report Number:**	522124
Location:	Llanwern	**Order Number:**	LLA663	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.096	**Natural Moisture Content (%)**	6.84
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	93.6
Particle Size <4mm	>95%		

Case	
SDG	190909-23
Lab Sample Number(s)	20682204
Sampled Date	05-Sep-2019
Customer Sample Ref.	TPBP123
Depth (m)	0.20 - 0.20

Eluate Analysis	**C_2** Concⁿ in 10:1 eluate (mg/l)		**A_2** 10:1 concⁿ leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
PAH Spec MS - Aqueous (W)							
PAH 16 EPA Total by GCMS	0.000158	<0.000082	0.00158	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	0.015	<0.01	0.15	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	11-Sep-2019
pH (pH Units)	9.24
Conductivity (µS/cm)	93.10
Temperature (°C)	16.40
Volume Leachant (Litres)	0.894

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	190909-23	**Client Reference:**		**Report Number:**	522124
Location:	Llanwern	**Order Number:**	LLA663	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.097	**Natural Moisture Content (%)**	7.87
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	92.7
Particle Size <4mm	>95%		

Case	
SDG	190909-23
Lab Sample Number(s)	20682231
Sampled Date	05-Sep-2019
Customer Sample Ref.	TPBP120
Depth (m)	0.10 - 0.10

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Mercury Dissolved (CVAF)	0.0000491	<0.00001	0.000491	<0.0001	-	-	-
Ammoniacal Nitrogen as N	0.0209	<0.01	0.209	<0.1	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.0133	<0.0005	0.133	<0.005	-	-	-
Free Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Phenol by HPLC (W)	<0.002	<0.002	<0.02	<0.02	-	-	-
Cresols by HPLC (W)	<0.006	<0.006	<0.06	<0.06	-	-	-
Xylenols by HPLC (W)	<0.008	<0.008	<0.08	<0.08	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Total Monohydric Phenols (W)	<0.016	<0.016	<0.16	<0.16	-	-	-
Chromium	0.00222	<0.001	0.0222	<0.01	-	-	-
Copper	0.00384	<0.0003	0.0384	<0.003	-	-	-
Lead	0.00621	<0.0002	0.0621	<0.002	-	-	-
Manganese	0.00701	<0.003	0.0701	<0.03	-	-	-
Nickel	0.000757	<0.0004	0.00757	<0.004	-	-	-
Selenium	0.00163	<0.001	0.0163	<0.01	-	-	-
Vanadium	0.0177	<0.001	0.177	<0.01	-	-	-
Zinc	0.00337	<0.001	0.0337	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.171	<0.019	1.71	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Acenaphthene by GCMS	0.00000547	<0.000005	0.0000547	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000253	<0.000005	0.000253	<0.00005	-	-	-
Anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000281	<0.000005	0.000281	<0.00005	-	-	-
Fluorene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.0000155	<0.000005	0.000155	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.0000102	<0.000005	0.000102	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.0000042	<0.000002	0.000042	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-

Leach Test Information

Date Prepared	11-Sep-2019
pH (pH Units)	9.27
Conductivity (µS/cm)	112.00
Temperature (°C)	21.00
Volume Leachant (Litres)	0.893

Mcerts Certification does not apply to leachates
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16:51:33 19/09/2019

CERTIFICATE OF ANALYSIS

SDG:	190909-23	**Client Reference:**		**Report Number:**	522124
Location:	Llanwern	**Order Number:**	LLA663	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.097	**Natural Moisture Content (%)**	7.87
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	92.7
Particle Size <4mm	>95%		

Case	
SDG	190909-23
Lab Sample Number(s)	20682231
Sampled Date	05-Sep-2019
Customer Sample Ref.	TPBP120
Depth (m)	0.10 - 0.10

Eluate Analysis	**C_2** Concⁿ in 10:1 eluate (mg/l)		**A_2** 10:1 concⁿ leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
PAH Spec MS - Aqueous (W)							
PAH 16 EPA Total by GCMS	0.0000888	<0.000082	0.000888	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	11-Sep-2019
pH (pH Units)	9.27
Conductivity (µS/cm)	112.00
Temperature (°C)	21.00
Volume Leachant (Litres)	0.893

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	190909-23	**Client Reference:**		**Report Number:**	522124
Location:	Llanwern	**Order Number:**	LLA663	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.098	**Natural Moisture Content (%)**	8.58
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	92.1
Particle Size <4mm	>95%		

Case	
SDG	190909-23
Lab Sample Number(s)	20682238
Sampled Date	05-Sep-2019
Customer Sample Ref.	TPBP120
Depth (m)	0.90 - 0.90

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Ammoniacal Nitrogen as N	0.0207	<0.01	0.207	<0.1	-	-	-
Total Cyanide (W)	0.14	<0.05	1.4	<0.5	-	-	-
Arsenic	0.00238	<0.0005	0.0238	<0.005	-	-	-
Free Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Phenol by HPLC (W)	<0.002	<0.002	<0.02	<0.02	-	-	-
Cresols by HPLC (W)	<0.006	<0.006	<0.06	<0.06	-	-	-
Xylenols by HPLC (W)	<0.008	<0.008	<0.08	<0.08	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Total Monohydric Phenols (W)	<0.016	<0.016	<0.16	<0.16	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.00179	<0.0003	0.0179	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.000811	<0.0004	0.00811	<0.004	-	-	-
Selenium	0.00292	<0.001	0.0292	<0.01	-	-	-
Vanadium	0.00434	<0.001	0.0434	<0.01	-	-	-
Zinc	0.00121	<0.001	0.0121	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.588	<0.019	5.88	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Acenaphthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.000121	<0.000005	0.00121	<0.00005	-	-	-
Anthracene by GCMS	0.0000124	<0.000005	0.000124	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000638	<0.000005	0.000638	<0.00005	-	-	-
Fluorene by GCMS	0.00000793	<0.000005	0.0000793	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.0000623	<0.000005	0.000623	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-

Leach Test Information

Date Prepared	11-Sep-2019
pH (pH Units)	8.49
Conductivity (µS/cm)	147.00
Temperature (°C)	20.60
Volume Leachant (Litres)	0.892

Mcerts Certification does not apply to leachates
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CERTIFICATE OF ANALYSIS

SDG:	190909-23	**Client Reference:**		**Report Number:**	522124
Location:	Llanwern	**Order Number:**	LLA663	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.098	**Natural Moisture Content (%)**	8.58
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	92.1
Particle Size <4mm	>95%		

Case	
SDG	190909-23
Lab Sample Number(s)	20682238
Sampled Date	05-Sep-2019
Customer Sample Ref.	TPBP120
Depth (m)	0.90 - 0.90

Eluate Analysis	**C_2** Concⁿ in 10:1 eluate (mg/l)		**A_2** 10:1 concⁿ leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
PAH Spec MS - Aqueous (W)							
PAH 16 EPA Total by GCMS	0.000267	<0.000082	0.00267	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	11-Sep-2019
pH (pH Units)	8.49
Conductivity (µS/cm)	147.00
Temperature (°C)	20.60
Volume Leachant (Litres)	0.892

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	190909-23	**Client Reference:**		**Report Number:**	522124
Location:	Llanwern	**Order Number:**	LLA663	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.104	**Natural Moisture Content (%)**	14.9
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	87
Particle Size <4mm	>95%		

Case	
SDG	190909-23
Lab Sample Number(s)	20682245
Sampled Date	05-Sep-2019
Customer Sample Ref.	TPBP120
Depth (m)	1.60 - 1.60

Eluate Analysis	**C_2** Concⁿ in 10:1 eluate (mg/l)		**A_2** 10:1 concⁿ leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Ammoniacal Nitrogen as N	0.166	<0.01	1.66	<0.1	-	-	-
Total Cyanide (W)	0.08	<0.05	0.8	<0.5	-	-	-
Arsenic	0.0014	<0.0005	0.014	<0.005	-	-	-
Free Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Phenol by HPLC (W)	<0.002	<0.002	<0.02	<0.02	-	-	-
Cresols by HPLC (W)	<0.006	<0.006	<0.06	<0.06	-	-	-
Xylenols by HPLC (W)	<0.008	<0.008	<0.08	<0.08	-	-	-
Cadmium	0.0000804	<0.00008	0.000804	<0.0008	-	-	-
Total Monohydric Phenols (W)	<0.016	<0.016	<0.16	<0.16	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.00126	<0.0003	0.0126	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	0.229	<0.003	2.29	<0.03	-	-	-
Nickel	0.00144	<0.0004	0.0144	<0.004	-	-	-
Selenium	0.00118	<0.001	0.0118	<0.01	-	-	-
Vanadium	0.00153	<0.001	0.0153	<0.01	-	-	-
Zinc	0.00229	<0.001	0.0229	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.384	<0.019	3.84	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000859	<0.00001	0.000859	<0.0001	-	-	-
Acenaphthene by GCMS	0.0000419	<0.000005	0.000419	<0.00005	-	-	-
Acenaphthylene by GCMS	0.0000203	<0.000005	0.000203	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000337	<0.000005	0.000337	<0.00005	-	-	-
Anthracene by GCMS	0.0000239	<0.000005	0.000239	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000715	<0.000005	0.000715	<0.00005	-	-	-
Fluorene by GCMS	0.0000215	<0.000005	0.000215	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.0000208	<0.000005	0.000208	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-

Leach Test Information

Date Prepared	11-Sep-2019
pH (pH Units)	7.45
Conductivity (µS/cm)	189.00
Temperature (°C)	17.30
Volume Leachant (Litres)	0.887

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	190909-23	**Client Reference:**		**Report Number:**	522124
Location:	Llanwern	**Order Number:**	LLA663	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.104	**Natural Moisture Content (%)**	14.9
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	87
Particle Size <4mm	>95%		

Case	
SDG	190909-23
Lab Sample Number(s)	20682245
Sampled Date	05-Sep-2019
Customer Sample Ref.	TPBP120
Depth (m)	1.60 - 1.60

Eluate Analysis	**C_2** Concⁿ in 10:1 eluate (mg/l)		**A_2** 10:1 concⁿ leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
PAH Spec MS - Aqueous (W)							
PAH 16 EPA Total by GCMS	0.00032	<0.000082	0.0032	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	0.05	<0.05	0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	0.016	<0.01	0.16	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	0.011	<0.01	0.11	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	0.023	<0.01	0.23	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	0.023	<0.01	0.23	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	0.073	<0.01	0.73	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	11-Sep-2019
pH (pH Units)	7.45
Conductivity (µS/cm)	189.00
Temperature (°C)	17.30
Volume Leachant (Litres)	0.887

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	190909-23	**Client Reference:**		**Report Number:**	522124
Location:	Llanwern	**Order Number:**	LLA663	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.094	**Natural Moisture Content (%)**	4.82
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	95.4
Particle Size <4mm	>95%		

Case	
SDG	190909-23
Lab Sample Number(s)	20682259
Sampled Date	05-Sep-2019
Customer Sample Ref.	TPBP121
Depth (m)	0.20 - 0.20

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Mercury Dissolved (CVAF)	0.0000487	<0.00001	0.000487	<0.0001	-	-	-
Ammoniacal Nitrogen as N	0.0392	<0.01	0.392	<0.1	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00854	<0.0005	0.0854	<0.005	-	-	-
Free Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Phenol by HPLC (W)	<0.002	<0.002	<0.02	<0.02	-	-	-
Cresols by HPLC (W)	<0.006	<0.006	<0.06	<0.06	-	-	-
Xylenols by HPLC (W)	<0.008	<0.008	<0.08	<0.08	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Total Monohydric Phenols (W)	<0.016	<0.016	<0.16	<0.16	-	-	-
Chromium	0.00494	<0.001	0.0494	<0.01	-	-	-
Copper	0.0069	<0.0003	0.069	<0.003	-	-	-
Lead	0.000645	<0.0002	0.00645	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.000618	<0.0004	0.00618	<0.004	-	-	-
Selenium	0.00188	<0.001	0.0188	<0.01	-	-	-
Vanadium	0.0353	<0.001	0.353	<0.01	-	-	-
Zinc	0.00439	<0.001	0.0439	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.627	<0.019	6.27	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000265	<0.00001	0.000265	<0.0001	-	-	-
Acenaphthene by GCMS	0.0000345	<0.000005	0.000345	<0.00005	-	-	-
Acenaphthylene by GCMS	0.00000642	<0.000005	0.0000642	<0.00005	-	-	-
Fluoranthene by GCMS	0.000262	<0.000005	0.00262	<0.00005	-	-	-
Anthracene by GCMS	0.0000268	<0.000005	0.000268	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000949	<0.000005	0.000949	<0.00005	-	-	-
Fluorene by GCMS	0.0000126	<0.000005	0.000126	<0.00005	-	-	-
Chrysene by GCMS	0.0000063	<0.000005	0.000063	<0.00005	-	-	-
Pyrene by GCMS	0.000204	<0.000005	0.00204	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.0000461	<0.000005	0.000461	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.0000712	<0.000005	0.000712	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	0.00000781	<0.000005	0.0000781	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	0.0000617	<0.000005	0.000617	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	0.0000672	<0.000005	0.000672	<0.00005	-	-	-

Leach Test Information

Date Prepared	11-Sep-2019
pH (pH Units)	9.80
Conductivity (µS/cm)	128.00
Temperature (°C)	19.10
Volume Leachant (Litres)	0.896

Mcerts Certification does not apply to leachates
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CERTIFICATE OF ANALYSIS

SDG:	190909-23	**Client Reference:**		**Report Number:**	522124
Location:	Llanwern	**Order Number:**	LLA663	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.094	**Natural Moisture Content (%)**	4.82
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	95.4
Particle Size <4mm	>95%		

Case	
SDG	190909-23
Lab Sample Number(s)	20682259
Sampled Date	05-Sep-2019
Customer Sample Ref.	TPBP121
Depth (m)	0.20 - 0.20

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
PAH Spec MS - Aqueous (W)							
PAH 16 EPA Total by GCMS	0.000929	<0.000082	0.00929	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	0.012	<0.01	0.12	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	0.044	<0.01	0.44	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	11-Sep-2019
pH (pH Units)	9.80
Conductivity (µS/cm)	128.00
Temperature (°C)	19.10
Volume Leachant (Litres)	0.896

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	190909-23	**Client Reference:**		**Report Number:**	522124
Location:	Llanwern	**Order Number:**	LLA663	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.095	**Natural Moisture Content (%)**	6.27
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	94.1
Particle Size <4mm	>95%		

Case	
SDG	190909-23
Lab Sample Number(s)	20682266
Sampled Date	05-Sep-2019
Customer Sample Ref.	TPBP121
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Mercury Dissolved (CVAF)	0.0000169	<0.00001	0.000169	<0.0001	-	-	-
Ammoniacal Nitrogen as N	0.021	<0.01	0.21	<0.1	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00806	<0.0005	0.0806	<0.005	-	-	-
Free Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Phenol by HPLC (W)	<0.002	<0.002	<0.02	<0.02	-	-	-
Cresols by HPLC (W)	<0.006	<0.006	<0.06	<0.06	-	-	-
Xylenols by HPLC (W)	<0.008	<0.008	<0.08	<0.08	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Total Monohydric Phenols (W)	<0.016	<0.016	<0.16	<0.16	-	-	-
Chromium	0.00197	<0.001	0.0197	<0.01	-	-	-
Copper	0.00256	<0.0003	0.0256	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.000594	<0.0004	0.00594	<0.004	-	-	-
Selenium	0.00171	<0.001	0.0171	<0.01	-	-	-
Vanadium	0.0208	<0.001	0.208	<0.01	-	-	-
Zinc	0.00301	<0.001	0.0301	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.437	<0.019	4.37	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000303	<0.00001	0.000303	<0.0001	-	-	-
Acenaphthene by GCMS	0.000106	<0.000005	0.00106	<0.00005	-	-	-
Acenaphthylene by GCMS	0.0000362	<0.000005	0.000362	<0.00005	-	-	-
Fluoranthene by GCMS	0.000935	<0.000005	0.00935	<0.00005	-	-	-
Anthracene by GCMS	0.0000958	<0.000005	0.000958	<0.00005	-	-	-
Phenanthrene by GCMS	0.000033	<0.000005	0.00033	<0.00005	-	-	-
Fluorene by GCMS	0.000066	<0.000005	0.00066	<0.00005	-	-	-
Chrysene by GCMS	0.000142	<0.000005	0.00142	<0.00005	-	-	-
Pyrene by GCMS	0.000648	<0.000005	0.00648	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.00012	<0.000005	0.0012	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.000157	<0.000005	0.00157	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.0000717	<0.000005	0.000717	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.000101	<0.000002	0.00101	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	0.0000291	<0.000005	0.000291	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	0.000102	<0.000005	0.00102	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	0.0000971	<0.000005	0.000971	<0.00005	-	-	-

Leach Test Information

Date Prepared	11-Sep-2019
pH (pH Units)	8.56
Conductivity (µS/cm)	112.00
Temperature (°C)	21.10
Volume Leachant (Litres)	0.894

Mcerts Certification does not apply to leachates
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CERTIFICATE OF ANALYSIS

SDG:	190909-23	**Client Reference:**		**Report Number:**	522124
Location:	Llanwern	**Order Number:**	LLA663	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.095	**Natural Moisture Content (%)**	6.27
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	94.1
Particle Size <4mm	>95%		

Case	
SDG	190909-23
Lab Sample Number(s)	20682266
Sampled Date	05-Sep-2019
Customer Sample Ref.	TPBP121
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Concⁿ in 10:1 eluate (mg/l)		**A_2** 10:1 concⁿ leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
PAH Spec MS - Aqueous (W)							
PAH 16 EPA Total by GCMS	0.00277	<0.000082	0.0277	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	11-Sep-2019
pH (pH Units)	8.56
Conductivity (µS/cm)	112.00
Temperature (°C)	21.10
Volume Leachant (Litres)	0.894

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	190909-23	**Client Reference:**		**Report Number:**	522124
Location:	Llanwern	**Order Number:**	LLA663	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.098	**Natural Moisture Content (%)**	9.05
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	91.7
Particle Size <4mm	>95%		

Case	
SDG	190909-23
Lab Sample Number(s)	20682274
Sampled Date	05-Sep-2019
Customer Sample Ref.	TPBP121
Depth (m)	1.80 - 1.80

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Ammoniacal Nitrogen as N	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00539	<0.0005	0.0539	<0.005	-	-	-
Free Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Phenol by HPLC (W)	<0.002	<0.002	<0.02	<0.02	-	-	-
Cresols by HPLC (W)	<0.006	<0.006	<0.06	<0.06	-	-	-
Xylenols by HPLC (W)	<0.008	<0.008	<0.08	<0.08	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Total Monohydric Phenols (W)	<0.016	<0.016	<0.16	<0.16	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.00192	<0.0003	0.0192	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	0.00527	<0.003	0.0527	<0.03	-	-	-
Nickel	0.000755	<0.0004	0.00755	<0.004	-	-	-
Selenium	0.00481	<0.001	0.0481	<0.01	-	-	-
Vanadium	0.0107	<0.001	0.107	<0.01	-	-	-
Zinc	0.0152	<0.001	0.152	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000472	<0.00001	0.000472	<0.0001	-	-	-
Acenaphthene by GCMS	0.00000666	<0.000005	0.0000666	<0.00005	-	-	-
Acenaphthylene by GCMS	0.00000727	<0.000005	0.0000727	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000718	<0.000005	0.000718	<0.00005	-	-	-
Anthracene by GCMS	0.00001	<0.000005	0.0001	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000306	<0.000005	0.000306	<0.00005	-	-	-
Fluorene by GCMS	0.00000727	<0.000005	0.0000727	<0.00005	-	-	-
Chrysene by GCMS	0.0000191	<0.000005	0.000191	<0.00005	-	-	-
Pyrene by GCMS	0.0000471	<0.000005	0.000471	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.0000115	<0.000005	0.000115	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.0000193	<0.000005	0.000193	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.0000117	<0.000005	0.000117	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.0000124	<0.000002	0.000124	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	0.0000191	<0.000005	0.000191	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	0.0000107	<0.000005	0.000107	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	0.0000277	<0.000005	0.000277	<0.00005	-	-	-

Leach Test Information

Date Prepared	12-Sep-2019
pH (pH Units)	8.03
Conductivity (µS/cm)	178.00
Temperature (°C)	19.60
Volume Leachant (Litres)	0.892

Mcerts Certification does not apply to leachates
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CERTIFICATE OF ANALYSIS

SDG:	190909-23	**Client Reference:**		**Report Number:**	522124
Location:	Llanwern	**Order Number:**	LLA663	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.098	**Natural Moisture Content (%)**	9.05
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	91.7
Particle Size <4mm	>95%		

Case	
SDG	190909-23
Lab Sample Number(s)	20682274
Sampled Date	05-Sep-2019
Customer Sample Ref.	TPBP121
Depth (m)	1.80 - 1.80

Eluate Analysis	**C_2** Concⁿ in 10:1 eluate (mg/l)		**A_2** 10:1 concⁿ leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
PAH Spec MS - Aqueous (W)							
PAH 16 EPA Total by GCMS	0.000359	<0.000082	0.00359	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	12-Sep-2019
pH (pH Units)	8.03
Conductivity (µS/cm)	178.00
Temperature (°C)	19.60
Volume Leachant (Litres)	0.892

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	190909-23	**Client Reference:**		**Report Number:**	522124
Location:	Llanwern	**Order Number:**	LLA663	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.129	**Natural Moisture Content (%)**	42.9
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	70
Particle Size <4mm	>95%		

Case	
SDG	190909-23
Lab Sample Number(s)	20682281
Sampled Date	05-Sep-2019
Customer Sample Ref.	TPBP121
Depth (m)	2.00 - 2.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Ammoniacal Nitrogen as N	5.62	<0.01	56.2	<0.1	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00892	<0.0005	0.0892	<0.005	-	-	-
Free Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Phenol by HPLC (W)	<0.002	<0.002	<0.02	<0.02	-	-	-
Cresols by HPLC (W)	<0.006	<0.006	<0.06	<0.06	-	-	-
Xylenols by HPLC (W)	<0.008	<0.008	<0.08	<0.08	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Total Monohydric Phenols (W)	<0.016	<0.016	<0.16	<0.16	-	-	-
Chromium	0.00136	<0.001	0.0136	<0.01	-	-	-
Copper	0.00105	<0.0003	0.0105	<0.003	-	-	-
Lead	0.000506	<0.0002	0.00506	<0.002	-	-	-
Manganese	0.24	<0.003	2.4	<0.03	-	-	-
Nickel	0.00179	<0.0004	0.0179	<0.004	-	-	-
Selenium	<0.001	<0.001	<0.01	<0.01	-	-	-
Vanadium	0.00253	<0.001	0.0253	<0.01	-	-	-
Zinc	0.113	<0.001	1.13	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.663	<0.019	6.63	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000908	<0.00001	0.000908	<0.0001	-	-	-
Acenaphthene by GCMS	0.0000132	<0.000005	0.000132	<0.00005	-	-	-
Acenaphthylene by GCMS	0.0000079	<0.000005	0.000079	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000885	<0.000005	0.000885	<0.00005	-	-	-
Anthracene by GCMS	0.0000132	<0.000005	0.000132	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000256	<0.000005	0.000256	<0.00005	-	-	-
Fluorene by GCMS	0.0000198	<0.000005	0.000198	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.0000523	<0.000005	0.000523	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-

Leach Test Information

Date Prepared	12-Sep-2019
pH (pH Units)	7.91
Conductivity (µS/cm)	142.00
Temperature (°C)	19.70
Volume Leachant (Litres)	0.861

Mcerts Certification does not apply to leachates
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CERTIFICATE OF ANALYSIS

SDG:	190909-23	**Client Reference:**		**Report Number:**	522124
Location:	Llanwern	**Order Number:**	LLA663	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.129	**Natural Moisture Content (%)**	42.9
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	70
Particle Size <4mm	>95%		

Case	
SDG	190909-23
Lab Sample Number(s)	20682281
Sampled Date	05-Sep-2019
Customer Sample Ref.	TPBP121
Depth (m)	2.00 - 2.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
PAH Spec MS - Aqueous (W)							
PAH 16 EPA Total by GCMS	0.000311	<0.000082	0.00311	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	12-Sep-2019
pH (pH Units)	7.91
Conductivity (µS/cm)	142.00
Temperature (°C)	19.70
Volume Leachant (Litres)	0.861

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	190909-23	**Client Reference:**		**Report Number:**	522124
Location:	Llanwern	**Order Number:**	LLA663	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.099	**Natural Moisture Content (%)**	9.65
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	91.2
Particle Size <4mm	>95%		

Case	
SDG	190909-23
Lab Sample Number(s)	20682288
Sampled Date	05-Sep-2019
Customer Sample Ref.	TPBP123
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Ammoniacal Nitrogen as N	0.0165	<0.01	0.165	<0.1	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.0069	<0.0005	0.069	<0.005	-	-	-
Free Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Phenol by HPLC (W)	<0.002	<0.002	<0.02	<0.02	-	-	-
Cresols by HPLC (W)	<0.006	<0.006	<0.06	<0.06	-	-	-
Xylenols by HPLC (W)	<0.008	<0.008	<0.08	<0.08	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Total Monohydric Phenols (W)	<0.016	<0.016	<0.16	<0.16	-	-	-
Chromium	0.00137	<0.001	0.0137	<0.01	-	-	-
Copper	0.00151	<0.0003	0.0151	<0.003	-	-	-
Lead	0.000313	<0.0002	0.00313	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.000769	<0.0004	0.00769	<0.004	-	-	-
Selenium	0.00199	<0.001	0.0199	<0.01	-	-	-
Vanadium	0.0416	<0.001	0.416	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.601	<0.019	6.01	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.000234	<0.00001	0.00234	<0.0001	-	-	-
Acenaphthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Acenaphthylene by GCMS	0.00000595	<0.000005	0.0000595	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000797	<0.000005	0.000797	<0.00005	-	-	-
Anthracene by GCMS	0.0000149	<0.000005	0.000149	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000564	<0.000005	0.000564	<0.00005	-	-	-
Fluorene by GCMS	0.0000122	<0.000005	0.000122	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.000051	<0.000005	0.00051	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.00000566	<0.000005	0.0000566	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	0.00000969	<0.000005	0.0000969	<0.00005	-	-	-

Leach Test Information

Date Prepared	12-Sep-2019
pH (pH Units)	8.10
Conductivity (µS/cm)	93.60
Temperature (°C)	20.00
Volume Leachant (Litres)	0.891

Mcerts Certification does not apply to leachates
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CERTIFICATE OF ANALYSIS

SDG:	190909-23	**Client Reference:**		**Report Number:**	522124
Location:	Llanwern	**Order Number:**	LLA663	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.099	**Natural Moisture Content (%)**	9.65
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	91.2
Particle Size <4mm	>95%		

Case	
SDG	190909-23
Lab Sample Number(s)	20682288
Sampled Date	05-Sep-2019
Customer Sample Ref.	TPBP123
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Concⁿ in 10:1 eluate (mg/l)		**A_2** 10:1 concⁿ leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
PAH Spec MS - Aqueous (W)							
PAH 16 EPA Total by GCMS	0.000469	<0.000082	0.00469	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	0.03	<0.01	0.3	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	12-Sep-2019
pH (pH Units)	8.10
Conductivity (µS/cm)	93.60
Temperature (°C)	20.00
Volume Leachant (Litres)	0.891

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	190909-23	**Client Reference:**		**Report Number:**	522124
Location:	Llanwern	**Order Number:**	LLA663	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.097	**Natural Moisture Content (%)**	7.64
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	92.9
Particle Size <4mm	>95%		

Case	
SDG	190909-23
Lab Sample Number(s)	20682329
Sampled Date	05-Sep-2019
Customer Sample Ref.	TPBP122
Depth (m)	0.20 - 0.20

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Ammoniacal Nitrogen as N	0.0115	<0.01	0.115	<0.1	-	-	-
Total Cyanide (W)	0.06	<0.05	0.6	<0.5	-	-	-
Arsenic	0.00384	<0.0005	0.0384	<0.005	-	-	-
Free Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Phenol by HPLC (W)	<0.002	<0.002	<0.02	<0.02	-	-	-
Cresols by HPLC (W)	<0.006	<0.006	<0.06	<0.06	-	-	-
Xylenols by HPLC (W)	<0.008	<0.008	<0.08	<0.08	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Total Monohydric Phenols (W)	<0.016	<0.016	<0.16	<0.16	-	-	-
Chromium	0.00293	<0.001	0.0293	<0.01	-	-	-
Copper	0.00286	<0.0003	0.0286	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	0.0142	<0.001	0.142	<0.01	-	-	-
Vanadium	0.00729	<0.001	0.0729	<0.01	-	-	-
Zinc	0.00983	<0.001	0.0983	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.59	<0.019	5.9	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000462	<0.00001	0.000462	<0.0001	-	-	-
Acenaphthene by GCMS	0.000018	<0.000005	0.00018	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000193	<0.000005	0.000193	<0.00005	-	-	-
Anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000182	<0.000005	0.000182	<0.00005	-	-	-
Fluorene by GCMS	0.00000553	<0.000005	0.0000553	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.0000144	<0.000005	0.000144	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.00000804	<0.000005	0.0000804	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-

Leach Test Information

Date Prepared	12-Sep-2019
pH (pH Units)	8.46
Conductivity (µS/cm)	221.00
Temperature (°C)	19.50
Volume Leachant (Litres)	0.893

Mcerts Certification does not apply to leachates
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CERTIFICATE OF ANALYSIS

SDG:	190909-23	**Client Reference:**		**Report Number:**	522124
Location:	Llanwern	**Order Number:**	LLA663	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.097	**Natural Moisture Content (%)**	7.64
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	92.9
Particle Size <4mm	>95%		

Case	
SDG	190909-23
Lab Sample Number(s)	20682329
Sampled Date	05-Sep-2019
Customer Sample Ref.	TPBP122
Depth (m)	0.20 - 0.20

Eluate Analysis	**C_2** Concⁿ in 10:1 eluate (mg/l)		**A_2** 10:1 concⁿ leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
PAH Spec MS - Aqueous (W)							
PAH 16 EPA Total by GCMS	0.00013	<0.000082	0.0013	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	0.04	<0.01	0.4	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	0.04	<0.01	0.4	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	0.045	<0.01	0.45	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	12-Sep-2019
pH (pH Units)	8.46
Conductivity (µS/cm)	221.00
Temperature (°C)	19.50
Volume Leachant (Litres)	0.893

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	190909-23	**Client Reference:**		**Report Number:**	522124
Location:	Llanwern	**Order Number:**	LLA663	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.133	**Natural Moisture Content (%)**	47.1
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	68
Particle Size <4mm	>95%		

Case	
SDG	190909-23
Lab Sample Number(s)	20682343
Sampled Date	05-Sep-2019
Customer Sample Ref.	TPBP122
Depth (m)	1.80 - 1.80

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Ammoniacal Nitrogen as N	3.59	<0.01	35.9	<0.1	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.0109	<0.0005	0.109	<0.005	-	-	-
Free Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Phenol by HPLC (W)	<0.002	<0.002	<0.02	<0.02	-	-	-
Cresols by HPLC (W)	<0.006	<0.006	<0.06	<0.06	-	-	-
Xylenols by HPLC (W)	<0.008	<0.008	<0.08	<0.08	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Total Monohydric Phenols (W)	<0.016	<0.016	<0.16	<0.16	-	-	-
Chromium	0.00211	<0.001	0.0211	<0.01	-	-	-
Copper	0.00411	<0.0003	0.0411	<0.003	-	-	-
Lead	0.00206	<0.0002	0.0206	<0.002	-	-	-
Manganese	0.0693	<0.003	0.693	<0.03	-	-	-
Nickel	0.00369	<0.0004	0.0369	<0.004	-	-	-
Selenium	<0.001	<0.001	<0.01	<0.01	-	-	-
Vanadium	0.00435	<0.001	0.0435	<0.01	-	-	-
Zinc	0.00707	<0.001	0.0707	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.48	<0.019	4.8	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000227	<0.00001	0.000227	<0.0001	-	-	-
Acenaphthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Acenaphthylene by GCMS	0.0000105	<0.000005	0.000105	<0.00005	-	-	-
Fluoranthene by GCMS	0.000104	<0.000005	0.00104	<0.00005	-	-	-
Anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Phenanthrene by GCMS	0.000023	<0.000005	0.00023	<0.00005	-	-	-
Fluorene by GCMS	0.00000858	<0.000005	0.0000858	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.0000546	<0.000005	0.000546	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.0000131	<0.000005	0.000131	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.00000551	<0.000005	0.0000551	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.00000613	<0.000002	0.0000613	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	0.00000592	<0.000005	0.0000592	<0.00005	-	-	-

Leach Test Information

Date Prepared	12-Sep-2019
pH (pH Units)	6.97
Conductivity (µS/cm)	102.00
Temperature (°C)	19.90
Volume Leachant (Litres)	0.858

Mcerts Certification does not apply to leachates
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CERTIFICATE OF ANALYSIS

SDG:	190909-23	**Client Reference:**		**Report Number:**	522124
Location:	Llanwern	**Order Number:**	LLA663	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.133	**Natural Moisture Content (%)**	47.1
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	68
Particle Size <4mm	>95%		

Case	
SDG	190909-23
Lab Sample Number(s)	20682343
Sampled Date	05-Sep-2019
Customer Sample Ref.	TPBP122
Depth (m)	1.80 - 1.80

Eluate Analysis	**C_2** Concⁿ in 10:1 eluate (mg/l)		**A_2** 10:1 concⁿ leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
PAH Spec MS - Aqueous (W)							
PAH 16 EPA Total by GCMS	0.000254	<0.000082	0.00254	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	0.571	<0.05	5.71	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	0.015	<0.01	0.15	<0.1	-	-	-
Aliphatics >C8-C10	0.02	<0.01	0.2	<0.1	-	-	-
Aliphatics >C10-C12	0.223	<0.01	2.23	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	0.113	<0.01	1.13	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	0.043	<0.01	0.43	<0.1	-	-	-
Aromatics >EC10-EC12	0.149	<0.01	1.49	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	0.113	<0.007	1.13	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	0.571	<0.01	5.71	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	0.006	<0.005	0.06	<0.05	-	-	-
m & p Xylene by GC	0.013	<0.008	0.13	<0.08	-	-	-
o Xylene by GC	0.01	<0.003	0.1	<0.03	-	-	-
Sum m&p and o Xylene by GC	0.023	<0.011	0.23	<0.11	-	-	-
Sum of BTEX by GC	0.142	<0.028	1.42	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	12-Sep-2019
pH (pH Units)	6.97
Conductivity (µS/cm)	102.00
Temperature (°C)	19.90
Volume Leachant (Litres)	0.858

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	190909-23	**Client Reference:**		**Report Number:**	522124
Location:	Llanwern	**Order Number:**	LLA663	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.099	**Natural Moisture Content (%)**	9.41
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	91.4
Particle Size <4mm	>95%		

Case	
SDG	190909-23
Lab Sample Number(s)	20682352
Sampled Date	05-Sep-2019
Customer Sample Ref.	TPBP144
Depth (m)	0.10 - 0.10

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Ammoniacal Nitrogen as N	0.0139	<0.01	0.139	<0.1	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00709	<0.0005	0.0709	<0.005	-	-	-
Free Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Phenol by HPLC (W)	<0.002	<0.002	<0.02	<0.02	-	-	-
Cresols by HPLC (W)	<0.006	<0.006	<0.06	<0.06	-	-	-
Xylenols by HPLC (W)	<0.008	<0.008	<0.08	<0.08	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Total Monohydric Phenols (W)	<0.016	<0.016	<0.16	<0.16	-	-	-
Chromium	0.0013	<0.001	0.013	<0.01	-	-	-
Copper	0.00257	<0.0003	0.0257	<0.003	-	-	-
Lead	0.000265	<0.0002	0.00265	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	0.00183	<0.001	0.0183	<0.01	-	-	-
Vanadium	0.0412	<0.001	0.412	<0.01	-	-	-
Zinc	0.00385	<0.001	0.0385	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.254	<0.019	2.54	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000547	<0.00001	0.000547	<0.0001	-	-	-
Acenaphthene by GCMS	0.00000655	<0.000005	0.0000655	<0.00005	-	-	-
Acenaphthylene by GCMS	0.0000142	<0.000005	0.000142	<0.00005	-	-	-
Fluoranthene by GCMS	0.000135	<0.000005	0.00135	<0.00005	-	-	-
Anthracene by GCMS	0.0000328	<0.000005	0.000328	<0.00005	-	-	-
Phenanthrene by GCMS	0.000122	<0.000005	0.00122	<0.00005	-	-	-
Fluorene by GCMS	0.0000196	<0.000005	0.000196	<0.00005	-	-	-
Chrysene by GCMS	0.0000871	<0.000005	0.000871	<0.00005	-	-	-
Pyrene by GCMS	0.0000899	<0.000005	0.000899	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.0000599	<0.000005	0.000599	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.000115	<0.000005	0.00115	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.0000417	<0.000005	0.000417	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.0000504	<0.000002	0.000504	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	0.0000178	<0.000005	0.000178	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	0.0000509	<0.000005	0.000509	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	0.0000457	<0.000005	0.000457	<0.00005	-	-	-

Leach Test Information

Date Prepared	12-Sep-2019
pH (pH Units)	8.40
Conductivity (µS/cm)	128.00
Temperature (°C)	19.60
Volume Leachant (Litres)	0.892

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	190909-23	**Client Reference:**		**Report Number:**	522124
Location:	Llanwern	**Order Number:**	LLA663	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.099	**Natural Moisture Content (%)**	9.41
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	91.4
Particle Size <4mm	>95%		

Case	
SDG	190909-23
Lab Sample Number(s)	20682352
Sampled Date	05-Sep-2019
Customer Sample Ref.	TPBP144
Depth (m)	0.10 - 0.10

Eluate Analysis	**C_2** Concⁿ in 10:1 eluate (mg/l)		**A_2** 10:1 concⁿ leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
PAH Spec MS - Aqueous (W)							
PAH 16 EPA Total by GCMS	0.000943	<0.000082	0.00943	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	12-Sep-2019
pH (pH Units)	8.40
Conductivity (µS/cm)	128.00
Temperature (°C)	19.60
Volume Leachant (Litres)	0.892

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	190909-23	**Client Reference:**		**Report Number:**	522124
Location:	Llanwern	**Order Number:**	LLA663	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.099	**Natural Moisture Content (%)**	9.77
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	91.1
Particle Size <4mm	>95%		

Case	
SDG	190909-23
Lab Sample Number(s)	20682359
Sampled Date	05-Sep-2019
Customer Sample Ref.	TPBP144
Depth (m)	0.90 - 0.90

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Ammoniacal Nitrogen as N	0.0214	<0.01	0.214	<0.1	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00561	<0.0005	0.0561	<0.005	-	-	-
Free Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Phenol by HPLC (W)	<0.002	<0.002	<0.02	<0.02	-	-	-
Cresols by HPLC (W)	<0.006	<0.006	<0.06	<0.06	-	-	-
Xylenols by HPLC (W)	<0.008	<0.008	<0.08	<0.08	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Total Monohydric Phenols (W)	<0.016	<0.016	<0.16	<0.16	-	-	-
Chromium	0.0015	<0.001	0.015	<0.01	-	-	-
Copper	0.0016	<0.0003	0.016	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.000504	<0.0004	0.00504	<0.004	-	-	-
Selenium	0.00111	<0.001	0.0111	<0.01	-	-	-
Vanadium	0.0108	<0.001	0.108	<0.01	-	-	-
Zinc	0.00143	<0.001	0.0143	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.378	<0.019	3.78	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.000149	<0.00001	0.00149	<0.0001	-	-	-
Acenaphthene by GCMS	0.00000646	<0.000005	0.0000646	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000244	<0.000005	0.000244	<0.00005	-	-	-
Anthracene by GCMS	0.00000538	<0.000005	0.0000538	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000356	<0.000005	0.000356	<0.00005	-	-	-
Fluorene by GCMS	0.0000104	<0.000005	0.000104	<0.00005	-	-	-
Chrysene by GCMS	0.00000522	<0.000005	0.0000522	<0.00005	-	-	-
Pyrene by GCMS	0.0000148	<0.000005	0.000148	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	0.00000876	<0.000005	0.0000876	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	0.00000866	<0.000005	0.0000866	<0.00005	-	-	-

Leach Test Information

Date Prepared	12-Sep-2019
pH (pH Units)	8.72
Conductivity (µS/cm)	93.30
Temperature (°C)	19.70
Volume Leachant (Litres)	0.891

Mcerts Certification does not apply to leachates
19/09/2019 16:52:30

16:51:33 19/09/2019

CERTIFICATE OF ANALYSIS

SDG:	190909-23	**Client Reference:**		**Report Number:**	522124
Location:	Llanwern	**Order Number:**	LLA663	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.099	**Natural Moisture Content (%)**	9.77
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	91.1
Particle Size <4mm	>95%		

Case	
SDG	190909-23
Lab Sample Number(s)	20682359
Sampled Date	05-Sep-2019
Customer Sample Ref.	TPBP144
Depth (m)	0.90 - 0.90

Eluate Analysis	**C_2** Concⁿ in 10:1 eluate (mg/l)		**A_2** 10:1 concⁿ leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
PAH Spec MS - Aqueous (W)							
PAH 16 EPA Total by GCMS	0.000268	<0.000082	0.00268	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	0.024	<0.01	0.24	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	12-Sep-2019
pH (pH Units)	8.72
Conductivity (µS/cm)	93.30
Temperature (°C)	19.70
Volume Leachant (Litres)	0.891

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	190909-23	**Client Reference:**		**Report Number:**	522124
Location:	Llanwern	**Order Number:**	LLA663	**Superseded Report:**	

Table of Results - Appendix

Method No	Reference	Description
PM024	Modified BS 1377	Soil preparation including homogenisation, moisture screens of soils for Asbestos Containing Material
PM115		Leaching Procedure for CEN One Stage Leach Test 2:1 & 10:1 1 Step
TM024	Method 4500A & B, AWWA/APHA, 20th Ed., 1999	Determination of Exchangeable Ammonium and Ammoniacal Nitrogen as N by titration on solids
TM048	HSG 248, Asbestos: The analysts' guide for sampling, analysis and clearance procedures	Identification of Asbestos in Bulk Material
TM062 (S)	National Grid Property Holdings Methods for the Collection & Analysis of Samples from National Grid Sites version 1 Sec 3.9	Determination of Phenols in Soils by HPLC
TM089	Modified: US EPA Methods 8020 & 602	Determination of Gasoline Range Hydrocarbons (GRO) by Headspace GC-FID (C4-C12)
TM099	BS 2690: Part 7:1968 / BS 6068: Part2.11:1984	Determination of Ammonium in Water Samples using the Kone Analyser
TM116	Modified: US EPA Method 8260, 8120, 8020, 624, 610 & 602	Determination of Volatile Organic Compounds by Headspace / GC-MS
TM132	In - house Method	ELTRA CS800 Operators Guide
TM133	BS 1377: Part 3 1990;BS 6068-2.5	Determination of pH in Soil and Water using the GLpH pH Meter
TM152	Method 3125B, AWWA/APHA, 20th Ed., 1999	Analysis of Aqueous Samples by ICP-MS
TM153	Method 4500A,B,C, I, M AWWA/APHA, 20th Ed., 1999	Determination of Total Cyanide, Free (Easily Liberatable) Cyanide and Thiocyanate using the Skalar SANS+ System Segmented Flow Analyser
TM173	Analysis of Petroleum Hydrocarbons in Environmental Media – Total Petroleum Hydrocarbon Criteria	Determination of Speciated Extractable Petroleum Hydrocarbons in Soils by GC-FID
TM174	Analysis of Petroleum Hydrocarbons in Environmental Media – Total Petroleum Hydrocarbon Criteria	Determination of Speciated Extractable Petroleum Hydrocarbons in Waters by GC-FID
TM178	Modified: US EPA Method 8100	Determination of Polynuclear Aromatic Hydrocarbons (PAH) by GC-MS in Waters
TM181	US EPA Method 6010B	Determination of Routine Metals in Soil by iCap 6500 Duo ICP-OES
TM183	BS EN 23506:2002, (BS 6068-2.74:2002) ISBN 0 580 38924 3	Determination of Trace Level Mercury in Waters and Leachates by PSA Cold Vapour Atomic Fluorescence Spectrometry
TM218	Shaker extraction - EPA method 3546.	The determination of PAH in soil samples by GC-MS
TM221	Inductively Coupled Plasma - Atomic Emission Spectroscopy. An Atlas of Spectral Information: Winge, Fassel, Peterson and Floyd	Determination of Acid extractable Sulphate in Soils by IRIS Emission Spectrometer
TM227	Standard methods for the examination of waters and wastewaters 20th Edition, AWWA/APHA Method 4500.	Determination of Total Cyanide, Free (Easily Liberatable) Cyanide and Thiocyanate
TM243		Mixed Anions In Soils By Kone
TM245	By GC-FID	Determination of GRO by Headspace in waters
TM256	The measurement of Electrical Conductivity and the Laboratory determination of pH Value of Natural, Treated and Wastewaters. HMSO, 1978. ISBN 011 751428 4.	Determination of pH in Water and Leachate using the GLpH pH Meter
TM259	by HPLC	Determination of Phenols in Waters and Leachates by HPLC
TM304	HSE Contract research Report no 83/1996	Asbestos Quantification in Soil: Fibres identified by morphology only

NA = not applicable.

Chemical testing (unless subcontracted) performed at ALS Life Sciences Ltd Hawarden (Method codes TM) or ALS Life Sciences Ltd Aberdeen (Method codes S).

CERTIFICATE OF ANALYSIS

SDG:	190909-23	**Client Reference:**		**Report Number:**	522124
Location:	Llanwern	**Order Number:**	LLA663	**Superseded Report:**	

Test Completion Dates

Lab Sample No(s)	20682231	20682238	20682245	20682252	20682259	20682266	20682274	20682281	20682329	20682336
Customer Sample Ref.	TPBP120	TPBP120	TPBP120	TPBP120	TPBP121	TPBP121	TPBP121	TPBP121	TPBP122	TPBP122
AGS Ref.										
Depth	0.10 - 0.10	0.90 - 0.90	1.60 - 1.60	1.90 - 1.90	0.20 - 0.20	0.50 - 0.50	1.80 - 1.80	2.00 - 2.00	0.20 - 0.20	1.00 - 1.00
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
Ammonium Low	14-Sep-2019	14-Sep-2019	13-Sep-2019		14-Sep-2019	14-Sep-2019	14-Sep-2019	14-Sep-2019	14-Sep-2019	
Ammonium Soil by Titration	13-Sep-2019	13-Sep-2019	13-Sep-2019	13-Sep-2019	13-Sep-2019	13-Sep-2019	13-Sep-2019	16-Sep-2019	13-Sep-2019	16-Sep-2019
Anions by Kone (soil)	16-Sep-2019	18-Sep-2019	16-Sep-2019	19-Sep-2019	16-Sep-2019	16-Sep-2019	13-Sep-2019	16-Sep-2019	16-Sep-2019	16-Sep-2019
Asbestos ID in Solid Samples	13-Sep-2019	13-Sep-2019	13-Sep-2019	13-Sep-2019	13-Sep-2019	13-Sep-2019	13-Sep-2019	13-Sep-2019	13-Sep-2019	16-Sep-2019
Asbestos Quantification - Full							16-Sep-2019		16-Sep-2019	
CEN 10:1 Leachate (1 Stage)	11-Sep-2019	11-Sep-2019	11-Sep-2019		11-Sep-2019	11-Sep-2019	12-Sep-2019	12-Sep-2019	12-Sep-2019	
CEN Readings	12-Sep-2019	12-Sep-2019	12-Sep-2019		12-Sep-2019	12-Sep-2019	15-Sep-2019	15-Sep-2019	15-Sep-2019	
Cyanide Comp/Free/Total/Thiocyanate	16-Sep-2019	16-Sep-2019	16-Sep-2019	12-Sep-2019	16-Sep-2019	16-Sep-2019	16-Sep-2019	16-Sep-2019	16-Sep-2019	13-Sep-2019
Dissolved Metals by ICP-MS	16-Sep-2019	16-Sep-2019	17-Sep-2019		17-Sep-2019	17-Sep-2019	17-Sep-2019	17-Sep-2019	17-Sep-2019	
EPH CWG (Aliphatic) Aqueous GC (W)	18-Sep-2019	18-Sep-2019	16-Sep-2019		17-Sep-2019	17-Sep-2019	17-Sep-2019	17-Sep-2019	18-Sep-2019	
EPH CWG (Aliphatic) GC (S)	16-Sep-2019	16-Sep-2019	16-Sep-2019	16-Sep-2019	16-Sep-2019	16-Sep-2019	16-Sep-2019	16-Sep-2019	16-Sep-2019	16-Sep-2019
EPH CWG (Aromatic) Aqueous GC (W)	18-Sep-2019	18-Sep-2019	16-Sep-2019		17-Sep-2019	17-Sep-2019	17-Sep-2019	17-Sep-2019	18-Sep-2019	
EPH CWG (Aromatic) GC (S)	16-Sep-2019	16-Sep-2019	16-Sep-2019	16-Sep-2019	16-Sep-2019	16-Sep-2019	16-Sep-2019	16-Sep-2019	16-Sep-2019	16-Sep-2019
GRO by GC-FID (S)	16-Sep-2019	16-Sep-2019	17-Sep-2019	17-Sep-2019	17-Sep-2019	16-Sep-2019	16-Sep-2019	16-Sep-2019	16-Sep-2019	17-Sep-2019
GRO by GC-FID (W)	17-Sep-2019	17-Sep-2019	13-Sep-2019		13-Sep-2019	13-Sep-2019	16-Sep-2019	16-Sep-2019	16-Sep-2019	
Mercury Dissolved	13-Sep-2019	13-Sep-2019	13-Sep-2019		13-Sep-2019	13-Sep-2019	16-Sep-2019	16-Sep-2019	16-Sep-2019	
Metals in solid samples by OES	16-Sep-2019	16-Sep-2019	17-Sep-2019	17-Sep-2019	17-Sep-2019	16-Sep-2019	16-Sep-2019	16-Sep-2019	16-Sep-2019	16-Sep-2019
PAH by GCMS	17-Sep-2019	18-Sep-2019	17-Sep-2019	17-Sep-2019	17-Sep-2019	16-Sep-2019	16-Sep-2019	16-Sep-2019	17-Sep-2019	17-Sep-2019
PAH Spec MS - Aqueous (W)	17-Sep-2019	17-Sep-2019	16-Sep-2019		17-Sep-2019	17-Sep-2019	17-Sep-2019	17-Sep-2019	17-Sep-2019	
pH	16-Sep-2019	15-Sep-2019	15-Sep-2019	15-Sep-2019	15-Sep-2019	15-Sep-2019	16-Sep-2019	16-Sep-2019	16-Sep-2019	16-Sep-2019
pH Value	16-Sep-2019	16-Sep-2019	16-Sep-2019		16-Sep-2019	16-Sep-2019	16-Sep-2019	16-Sep-2019	16-Sep-2019	
Phenols by HPLC (S)	14-Sep-2019	16-Sep-2019	16-Sep-2019	14-Sep-2019	16-Sep-2019	16-Sep-2019	14-Sep-2019	14-Sep-2019	17-Sep-2019	17-Sep-2019
Phenols by HPLC (W)	17-Sep-2019	17-Sep-2019	17-Sep-2019		16-Sep-2019	17-Sep-2019	17-Sep-2019	16-Sep-2019	17-Sep-2019	
Sample description	10-Sep-2019	10-Sep-2019	11-Sep-2019	10-Sep-2019	10-Sep-2019	10-Sep-2019	10-Sep-2019	10-Sep-2019	11-Sep-2019	11-Sep-2019
Total Organic Carbon	14-Sep-2019	16-Sep-2019	16-Sep-2019	16-Sep-2019	14-Sep-2019	14-Sep-2019	14-Sep-2019	14-Sep-2019	16-Sep-2019	14-Sep-2019
Total Sulphate	16-Sep-2019	16-Sep-2019	17-Sep-2019	17-Sep-2019	16-Sep-2019	16-Sep-2019	16-Sep-2019	16-Sep-2019	16-Sep-2019	16-Sep-2019
Total Sulphur	14-Sep-2019	14-Sep-2019	16-Sep-2019	16-Sep-2019	14-Sep-2019	14-Sep-2019	14-Sep-2019	14-Sep-2019	14-Sep-2019	14-Sep-2019
TPH CWG (W)	18-Sep-2019	18-Sep-2019	16-Sep-2019		17-Sep-2019	17-Sep-2019	17-Sep-2019	17-Sep-2019	18-Sep-2019	
TPH CWG GC (S)	16-Sep-2019	16-Sep-2019	17-Sep-2019	17-Sep-2019	17-Sep-2019	16-Sep-2019	16-Sep-2019	16-Sep-2019	16-Sep-2019	17-Sep-2019
VOC MS (S)	13-Sep-2019	13-Sep-2019	16-Sep-2019	16-Sep-2019	16-Sep-2019	13-Sep-2019	13-Sep-2019	13-Sep-2019	13-Sep-2019	13-Sep-2019

Lab Sample No(s)	20682343	20682204	20682288	20682295	20682223	20682352	20682359	20682367
Customer Sample Ref.	TPBP122	TPBP123	TPBP123	TPBP123	TPBP144	TPBP144	TPBP144	TPBP144
AGS Ref.								
Depth	1.80 - 1.80	0.20 - 0.20	0.50 - 0.50	1.50 - 1.50	1.80 - 1.80	0.10 - 0.10	0.90 - 0.90	1.40 - 1.40
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
Ammonium Low	14-Sep-2019	13-Sep-2019	14-Sep-2019			14-Sep-2019	14-Sep-2019	
Ammonium Soil by Titration	13-Sep-2019	13-Sep-2019	13-Sep-2019	13-Sep-2019	13-Sep-2019	16-Sep-2019	13-Sep-2019	16-Sep-2019
Anions by Kone (soil)	16-Sep-2019	16-Sep-2019	16-Sep-2019	19-Sep-2019	19-Sep-2019	16-Sep-2019	16-Sep-2019	16-Sep-2019
Asbestos ID in Solid Samples	16-Sep-2019	13-Sep-2019	13-Sep-2019	13-Sep-2019	16-Sep-2019	13-Sep-2019	13-Sep-2019	13-Sep-2019
CEN 10:1 Leachate (1 Stage)	12-Sep-2019	11-Sep-2019	12-Sep-2019			12-Sep-2019	12-Sep-2019	
CEN Readings	15-Sep-2019	12-Sep-2019	15-Sep-2019			15-Sep-2019	15-Sep-2019	
Cyanide Comp/Free/Total/Thiocyanate	16-Sep-2019	16-Sep-2019	16-Sep-2019	13-Sep-2019	13-Sep-2019	16-Sep-2019	16-Sep-2019	13-Sep-2019
Dissolved Metals by ICP-MS	17-Sep-2019	17-Sep-2019	17-Sep-2019			17-Sep-2019	17-Sep-2019	
EPH CWG (Aliphatic) Aqueous GC (W)	17-Sep-2019	17-Sep-2019	17-Sep-2019			17-Sep-2019	17-Sep-2019	
EPH CWG (Aliphatic) GC (S)	16-Sep-2019	16-Sep-2019	16-Sep-2019	13-Sep-2019	13-Sep-2019	16-Sep-2019	16-Sep-2019	16-Sep-2019
EPH CWG (Aromatic) Aqueous GC (W)	17-Sep-2019	17-Sep-2019	17-Sep-2019			17-Sep-2019	17-Sep-2019	
EPH CWG (Aromatic) GC (S)	16-Sep-2019	16-Sep-2019	16-Sep-2019	13-Sep-2019	13-Sep-2019	16-Sep-2019	16-Sep-2019	16-Sep-2019
GRO by GC-FID (S)	16-Sep-2019	16-Sep-2019	17-Sep-2019	16-Sep-2019	16-Sep-2019	16-Sep-2019	18-Sep-2019	16-Sep-2019
GRO by GC-FID (W)	16-Sep-2019	13-Sep-2019	16-Sep-2019			16-Sep-2019	16-Sep-2019	
Mercury Dissolved	16-Sep-2019	13-Sep-2019	16-Sep-2019			16-Sep-2019	16-Sep-2019	
Metals in solid samples by OES	16-Sep-2019	16-Sep-2019	16-Sep-2019	17-Sep-2019	17-Sep-2019	16-Sep-2019	16-Sep-2019	15-Sep-2019
PAH by GCMS	17-Sep-2019	16-Sep-2019	16-Sep-2019	17-Sep-2019	17-Sep-2019	17-Sep-2019	17-Sep-2019	18-Sep-2019
PAH Spec MS - Aqueous (W)	17-Sep-2019	17-Sep-2019	17-Sep-2019			17-Sep-2019	17-Sep-2019	
pH	16-Sep-2019	16-Sep-2019	15-Sep-2019	16-Sep-2019	16-Sep-2019	16-Sep-2019	16-Sep-2019	16-Sep-2019
pH Value	16-Sep-2019	16-Sep-2019	16-Sep-2019			16-Sep-2019	16-Sep-2019	
Phenols by HPLC (S)	14-Sep-2019	16-Sep-2019	17-Sep-2019	16-Sep-2019	14-Sep-2019	14-Sep-2019	14-Sep-2019	14-Sep-2019
Phenols by HPLC (W)	17-Sep-2019	16-Sep-2019	17-Sep-2019			17-Sep-2019	17-Sep-2019	
Sample description	11-Sep-2019	10-Sep-2019	10-Sep-2019	11-Sep-2019	11-Sep-2019	11-Sep-2019	11-Sep-2019	11-Sep-2019
Total Organic Carbon	14-Sep-2019	14-Sep-2019	14-Sep-2019	16-Sep-2019	16-Sep-2019	14-Sep-2019	14-Sep-2019	14-Sep-2019
Total Sulphate	16-Sep-2019	16-Sep-2019	16-Sep-2019	16-Sep-2019	16-Sep-2019	16-Sep-2019	16-Sep-2019	16-Sep-2019
Total Sulphur	14-Sep-2019	14-Sep-2019	14-Sep-2019	14-Sep-2019	14-Sep-2019	14-Sep-2019	14-Sep-2019	14-Sep-2019
TPH CWG (W)	17-Sep-2019	17-Sep-2019	17-Sep-2019			17-Sep-2019	17-Sep-2019	
TPH CWG GC (S)	16-Sep-2019	16-Sep-2019	17-Sep-2019	16-Sep-2019	16-Sep-2019	16-Sep-2019	18-Sep-2019	16-Sep-2019
VOC MS (S)	13-Sep-2019	13-Sep-2019	13-Sep-2019	13-Sep-2019	16-Sep-2019	16-Sep-2019	16-Sep-2019	16-Sep-2019

Appendix General

1. Results are expressed on a dry weight basis (dried at 35ºC) for all soil analyses except for the following: NRA and CEN Leach tests, flash point LOI, pH, ammonium as NH4 by the BRE method, VOC TICs and SVOC TICs.

2. If sufficient sample is received a sub sample will be retained free of charge for 30 days after analysis is completed (e-mailed) for all sample types unless the sample is destroyed on testing. The prepared soil sub sample that is analysed for asbestos will be retained for a period of 6 months after the analysis date. All bulk samples will be retained for a period of 6 months after the analysis date. All samples received and not scheduled will be disposed of one month after the date of receipt unless we are instructed to the contrary. Once the initial period has expired, a storage charge will be applied for each month or part thereof until the client cancels the request for sample storage. ALS reserve the right to charge for samples received and stored but not analysed.

3. With respect to turnaround, we will always endeavour to meet client requirements wherever possible, but turnaround times cannot be absolutely guaranteed due to so many variables beyond our control.

4. We take responsibility for any test performed by sub-contractors (marked with an asterisk). We endeavour to use UKAS/MCERTS Accredited Laboratories, who either complete a quality questionnaire or are audited by ourselves. For some determinands there are no UKAS/MCERTS Accredited Laboratories, in this instance a laboratory with a known track record will be utilised.

5. If no separate volatile sample is supplied by the client, or if a headspace or sediment is present in the volatile sample, the integrity of the data may be compromised. This will be flagged up as an invalid VOC on the test schedule and the result marked as deviating on the test certificate.

6. NDP - No determination possible due to insufficient/unsuitable sample.

7. Results relate only to the items tested.

8. LoDs (Limit of Detection) for wet tests reported on a dry weight basis are not corrected for moisture content.

9. **Surrogate recoveries** - Surrogates are added to your sample to monitor recovery of the test requested. A % recovery is reported, results are not corrected for the recovery measured. Typical recoveries for organics tests are 70-130%. Recoveries in soils are affected by organic rich or clay rich matrices. Waters can be affected by remediation fluids or high amounts of sediment. Test results are only ever reported if all of the associated quality checks pass; it is assumed that all recoveries outside of the values above are due to matrix affect.

10. Stones/debris are not routinely removed. We always endeavour to take a representative sub sample from the received sample.

11. In certain circumstances the method detection limit may be elevated due to the sample being outside the calibration range. Other factors that may contribute to this include possible interferences. In both cases the sample would be diluted which would cause the method detection limit to be raised.

12. Mercury results quoted on soils will not include volatile mercury as the analysis is performed on a dried and crushed sample.

13. For leachate preparations other than Zero Headspace Extraction (ZHE) volatile loss may occur.

14. For the BSEN 12457-3 two batch process to allow the cumulative release to be calculated, the volume of the leachate produced is measured and filtered for all tests. We therefore cannot carry out any unfiltered analysis. The tests affected include volatiles GCFID/GCMS and all subcontracted analysis.

15. Analysis and identification of specific compounds using GCFID is by retention time only, and we routinely calibrate and quantify for benzene, toluene, ethylbenzenes and xylenes (BTEX). For total volatiles in the C5-C12 range, the total area of the chromatogram is integrated and expressed as ug/kg or ug/l. Although this analysis is commonly used for the quantification of gasoline range organics (GRO), the system will also detect other compounds such as chlorinated solvents, and this may lead to a falsely high result with respect to hydrocarbons only. It is not possible to specifically identify these non-hydrocarbons, as standards are not routinely run for any other compounds, and for more definitive identification, volatiles by GCMS should be utilised.

16. We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample. Other coarse granular material such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

17. **Tentatively Identified Compounds (TICs)** are non-target peaks in VOC and SVOC analysis. All non-target peaks detected with a concentration above the LoD are subjected to a mass spectral library search. Non-target peaks with a library search confidence of >75% are reported based on the best mass spectral library match. When a non-target peak with a library search confidence of <75% is detected it is reported as “mixed hydrocarbons”. Non-target compounds identified from the scan data are semi-quantified relative to one of the deuterated internal standards, under the same chromatographic conditions as the target compounds. This result is reported as a semi-quantitative value and reported as Tentatively Identified Compounds (TICs). TICs are outside the scope of UKAS accreditation and are not moisture corrected.

18. **Sample Deviations**

If a sample is classed as deviated then the associated results may be compromised.

1	**Container with Headspace provided for volatiles analysis**
2	**Incorrect container received**
3	**Deviation from method**
§	**Sampled on date not provided**
♦	**Sample holding time exceeded in laboratory**
@	**Sample holding time exceeded due to late arrival of instructions or samples**

19. **Asbestos**

When requested, the individual sub sample scheduled will be analysed in house for the presence of asbestos fibres and asbestos containing material by our documented in house method TM048 based on HSG 248 (2005), which is accredited to ISO17025. If a specific asbestos fibre type is not found this will be reported as “Not detected”. If no asbestos fibre types are found all will be reported as “Not detected” and the sub sample analysed deemed to be clear of asbestos. If an asbestos fibre type is found it will be reported as detected (for each fibre type found). Testing can be carried out on asbestos positive samples, but, due to Health and Safety considerations, may be replaced by alternative tests or reported as No Determination Possible (NDP). The quantity of

Identification of Asbestos in Bulk Materials & Soils

The results for identification of asbestos in bulk materials are obtained from supplied bulk materials which have been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

The results for identification of asbestos in soils are obtained from a homogenised sub sample which has been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

Asbestos Type	Common Name
Chrysotile	White Asbestos
Amosite	Brown Asbestos
Crocidolite	Blue Asbestos
Fibrous Actinolite	-
Fibrous Anthophyllite	-
Fibrous Tremolite	-

Visual Estimation Of Fibre Content

Estimation of fibre content is not permitted as part of our UKAS accredited test other than: - Trace - Where only one or two asbestos fibres were identified.

Respirable Fibres

Respirable fibres are defined as fibres of <3 µm diameter, longer than 5 µm and with aspect ratios of at least 3:1 that can be inhaled into the lower regions of the lung and are generally acknowledged to be most important predictor of hazard and risk for cancers of the lung.
Standing Committee of Analysts, *The Quantification of Asbestos in Soil (2107).*

Further guidance on typical asbestos fibre content of manufactured products can be found in HSG 264.

The identification of asbestos containing materials and soils falls within our schedule of tests for which we hold UKAS accreditation, however opinions, interpretations and all other information contained in the report are outside the scope of UKAS accreditation.

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Manor Road (off Manor Lane)
Hawarden
Deeside
CH5 3US
Tel: (01244) 528700
Fax: (01244) 528701
email: hawardencustomerservices@alsglobal.com
Website: www.alsenvironmental.co.uk

Atkins Global Ltd
Project Jonah site office
Llan Coed House
Suite 24
Coed Darcy
Llandarcy
SA10 6HJ

Attention: Scott Bowler

CERTIFICATE OF ANALYSIS

Date of report Generation:	29 October 2019
Customer:	Atkins Global Ltd
Sample Delivery Group (SDG):	191012-76
Your Reference:	
Location:	Llanwern
Report No:	527515

This report has been revised and directly supersedes 527504 in its entirety.

We received 41 samples on Saturday October 12, 2019 and 41 of these samples were scheduled for analysis which was completed on Tuesday October 29, 2019. Accredited laboratory tests are defined within the report, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation.

Should this report require incorporation into client reports, it must be used in its entirety and not simply with the data sections alone.

Chemical testing (unless subcontracted) performed at ALS Life Sciences Ltd Hawarden (Method codes TM) or ALS Life Sciences Ltd Aberdeen (Method codes S).

All sample data is provided by the customer. The reported results relate to the sample supplied, and on the basis that this data is correct.
Incorrect sampling dates and/or sample information will affect the validity of results.
The customer is not permitted to reproduce this report except in full without the approval of the laboratory.

Approved By:

Sonia McWhan
Operations Manager

CERTIFICATE OF ANALYSIS

SDG:	191012-76	**Client Reference:**		**Report Number:**	527515
Location:	Llanwern	**Order Number:**	LLA681	**Superseded Report:**	527504

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
20928248	W94-01		0.00 - 0.00	10/10/2019
20928340	W94-02		0.00 - 0.00	10/10/2019
20928399	W94-03		0.00 - 0.00	10/10/2019
20928458	W95-01		0.00 - 0.00	10/10/2019
20928475	W95-02		0.00 - 0.00	10/10/2019
20928484	W95-03		0.00 - 0.00	10/10/2019
20928492	W95-04		0.00 - 0.00	10/10/2019
20928497	W96-01		0.00 - 0.00	10/10/2019
20928504	W96-02		0.00 - 0.00	10/10/2019
20928253	W96-03		0.00 - 0.00	10/10/2019
20928264	W96-04		0.00 - 0.00	10/10/2019
20928269	W96-05		0.00 - 0.00	10/10/2019
20928278	W96-06		0.00 - 0.00	10/10/2019
20928284	W97-01		0.00 - 0.00	10/10/2019
20928292	W97-02		0.00 - 0.00	10/10/2019
20928300	W97-03		0.00 - 0.00	10/10/2019
20928310	W97-04		0.00 - 0.00	10/10/2019
20928321	W97-05		0.00 - 0.00	10/10/2019
20928330	W97-06		0.00 - 0.00	10/10/2019
20928349	W98-01		0.00 - 0.00	10/10/2019
20928354	W98-02		0.00 - 0.00	10/10/2019
20928360	W98-03		0.00 - 0.00	10/10/2019
20928365	W98-04		0.00 - 0.00	10/10/2019
20928369	W99-01		0.00 - 0.00	10/10/2019
20928373	W99-02		0.00 - 0.00	10/10/2019
20928378	W99-03		0.00 - 0.00	10/10/2019
20928385	W99-04		0.00 - 0.00	10/10/2019
20928390	W99-05		0.00 - 0.00	10/10/2019
20928394	W100-01		0.00 - 0.00	10/10/2019
20928405	W100-02		0.00 - 0.00	10/10/2019
20928412	W100-03		0.00 - 0.00	10/10/2019
20928417	W100-04		0.00 - 0.00	10/10/2019
20928421	W101-01		0.00 - 0.00	10/10/2019
20928430	W101-02		0.00 - 0.00	10/10/2019
20928436	W101-03		0.00 - 0.00	10/10/2019
20928440	W102-01		0.00 - 0.00	11/10/2019
20928444	W102-02		0.00 - 0.00	11/10/2019
20928449	W102-03		0.00 - 0.00	11/10/2019
20928454	W103-01		0.00 - 0.00	11/10/2019
20928464	W103-02		0.00 - 0.00	11/10/2019
20928469	W103-03		0.00 - 0.00	11/10/2019

Maximum Sample/Coolbox Temperature (°C) : **12.6**

ISO5667-3 Water quality - Sampling - Part3 -
During Transportation samples shall be stored in a cooling device capable of maintaining a temperature of (5±3)°C.

ALS have data which show that a cool box with 4 frozen icepacks is capable of maintaining pre-chilled samples at a temperature of (5±3)°C for a period of up to 24hrs.

Only received samples which have had analysis scheduled will be shown on the following pages.

CERTIFICATE OF ANALYSIS

Validated

SDG: 191012-76	**Client Reference:**	**Report Number:** 527515	
Location: Llanwern	**Order Number:** LLA681	**Superseded Report:** 527504	

Results Legend

X Test

N No Determination Possible

Sample Types -

S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

Lab Sample No(s)			20928248			20928340			20928399			20928458			20928475			20928484			20928492
Customer Sample Reference			W94-01			W94-02			W94-03			W95-01			W95-02			W95-03			W95-04
AGS Reference																					
Depth (m)			0.00 - 0.00			0.00 - 0.00			0.00 - 0.00			0.00 - 0.00			0.00 - 0.00			0.00 - 0.00			0.00 - 0.00
Container			1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB
Sample Type			S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
Ammoniacal Nitrogen	All	NDPs: 0 Tests: 41	X			X			X			X			X			X			X
Ammonium Soil by Titration	All	NDPs: 0 Tests: 41		X			X			X			X			X			X		
Asbestos ID in Solid Samples	All	NDPs: 0 Tests: 23	X						X			X						X			
Asbestos Quantification - Full	All	NDPs: 0 Tests: 5																			
CEN Readings	All	NDPs: 0 Tests: 41	X			X			X			X			X			X			X
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 82	X	X		X	X		X	X		X	X		X	X		X	X		X
Dissolved Metals by ICP-MS	All	NDPs: 0 Tests: 41	X			X			X			X			X			X			X
EPH CWG (Aliphatic) Aqueous GC (W)	All	NDPs: 0 Tests: 41	X			X			X			X			X			X			X
EPH CWG (Aromatic) Aqueous GC (W)	All	NDPs: 0 Tests: 41	X			X			X			X			X			X			X
EPH CWG GC (S)	All	NDPs: 0 Tests: 41		X			X			X			X			X			X		
GRO by GC-FID (S)	All	NDPs: 0 Tests: 41			X			X			X			X			X			X	
GRO by GC-FID (W)	All	NDPs: 0 Tests: 41	X			X			X			X			X			X			X
Mercury Dissolved	All	NDPs: 0 Tests: 41	X			X			X			X			X			X			X
Metals in solid samples by OES	All	NDPs: 0 Tests: 41		X			X			X			X			X			X		
PAH by GCMS	All	NDPs: 0 Tests: 41		X			X			X			X			X			X		

16:42:41 29/10/2019

20928284	W97-01		0.00 - 0.00	1kg TUB	S	x		x	x	x	x	x	x	x			x	x					
20928278	W96-06		0.00 - 0.00	60g VOC (ALE215)	S											x							
				250g Amber Jar (ALE210)	S		x				x						x					x	x
				1kg TUB	S	x				x	x	x	x	x				x	x				
20928269	W96-05		0.00 - 0.00	60g VOC (ALE215)	S											x							
				250g Amber Jar (ALE210)	S		x				x						x					x	x
				1kg TUB	S	x		x		x	x	x	x	x				x	x				
20928264	W96-04		0.00 - 0.00	60g VOC (ALE215)	S											x							
				250g Amber Jar (ALE210)	S		x				x						x					x	x
				1kg TUB	S	x				x	x	x	x	x				x	x				
20928253	W96-03		0.00 - 0.00	60g VOC (ALE215)	S											x							
				250g Amber Jar (ALE210)	S		x				x						x					x	x
				1kg TUB	S	x		x		x	x	x	x	x				x	x				
20928504	W96-02		0.00 - 0.00	60g VOC (ALE215)	S											x							
				250g Amber Jar (ALE210)	S		x				x						x					x	x
				1kg TUB	S	x				x	x	x	x	x				x	x				
20928497	W96-01		0.00 - 0.00	60g VOC (ALE215)	S											x							
				250g Amber Jar (ALE210)	S		x				x						x					x	x
				1kg TUB	S	x		x		x	x	x	x	x				x	x				
20928492	W95-04		0.00 - 0.00	60g VOC (ALE215)	S											x							
				250g Amber Jar (ALE210)	S		x				x						x					x	x

Validated

CERTIFICATE OF ANALYSIS

SDG:	191012-76	**Client Reference:**		**Report Number:**	527515
Location:	Llanwern	**Order Number:**	LLA681	**Superseded Report:**	527504

Results Legend

X **Test**

N **No Determination Possible**

Sample Types -
S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

			Lab Sample No(s)																			
			20928248			20928340			20928399			20928458			20928475			20928484			20928492	
			Customer Sample Reference																			
			W94-01			W94-02			W94-03			W95-01			W95-02			W95-03			W95-04	
			AGS Reference																			
			Depth (m)																			
			0.00 - 0.00			0.00 - 0.00			0.00 - 0.00			0.00 - 0.00			0.00 - 0.00			0.00 - 0.00			0.00 - 0.00	
			Container																			
			1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB
			Sample Type																			
			S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
PAH Spec MS - Aqueous (W)	All	NDPs: 0 Tests: 41	X			X			X			X			X			X			X	
pH	All	NDPs: 0 Tests: 41		X			X			X			X			X			X				
pH Value	All	NDPs: 0 Tests: 41	X			X			X			X			X			X			X	
Phenols by HPLC (S)	All	NDPs: 0 Tests: 41		X			X			X			X			X			X				
Sample description	All	NDPs: 0 Tests: 41		X			X			X			X			X			X				
Total Organic Carbon	All	NDPs: 0 Tests: 41		X			X			X			X			X			X				
TPH CWG (W)	All	NDPs: 0 Tests: 41	X			X			X			X			X			X			X	
TPH CWG GC (S)	All	NDPs: 0 Tests: 41		X			X			X			X			X			X				
VOC MS (S)	All	NDPs: 0 Tests: 41			X			X			X			X			X			X		

20928284	W97-01		0.00 - 0.00	1kg TUB	S	X		X				X		
20928278	W96-06		0.00 - 0.00	60g VOC (ALE215)	S									X
				250g Amber Jar (ALE210)	S		X		X	X	X		X	
				1kg TUB	S	X		X				X		
20928269	W96-05		0.00 - 0.00	60g VOC (ALE215)	S									X
				250g Amber Jar (ALE210)	S		X		X	X	X		X	
				1kg TUB	S	X		X				X		
20928264	W96-04		0.00 - 0.00	60g VOC (ALE215)	S									X
				250g Amber Jar (ALE210)	S		X		X	X	X		X	
				1kg TUB	S	X		X				X		
20928253	W96-03		0.00 - 0.00	60g VOC (ALE215)	S									X
				250g Amber Jar (ALE210)	S		X		X	X	X		X	
				1kg TUB	S	X		X				X		
20928504	W96-02		0.00 - 0.00	60g VOC (ALE215)	S									X
				250g Amber Jar (ALE210)	S		X		X	X	X		X	
				1kg TUB	S	X		X				X		
20928497	W96-01		0.00 - 0.00	60g VOC (ALE215)	S									X
				250g Amber Jar (ALE210)	S		X		X	X	X		X	
				1kg TUB	S	X		X				X		
20928492	W95-04		0.00 - 0.00	60g VOC (ALE215)	S									X
				250g Amber Jar (ALE210)	S		X		X	X	X		X	

Validated

CERTIFICATE OF ANALYSIS

SDG:	191012-76	**Client Reference:**		**Report Number:**	527515
Location:	Llanwern	**Order Number:**	LLA681	**Superseded Report:**	527504

Results Legend

X Test

N No Determination Possible

Sample Types -

S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

Lab Sample No(s)			20928284		20928292			20928300			20928310			20928321			20928330			20928349
Customer Sample Reference			W97-01		W97-02			W97-03			W97-04			W97-05			W97-06			W98-01
AGS Reference																				
Depth (m)			0.00 - 0.00		0.00 - 0.00			0.00 - 0.00			0.00 - 0.00			0.00 - 0.00			0.00 - 0.00			0.00 - 0.00
Container			250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)
Sample Type			S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
Ammoniacal Nitrogen	All	NDPs: 0 Tests: 41			X			X			X			X			X			X	
Ammonium Soil by Titration	All	NDPs: 0 Tests: 41	X			X			X			X			X			X			X
Asbestos ID in Solid Samples	All	NDPs: 0 Tests: 23						X						X						X	
Asbestos Quantification - Full	All	NDPs: 0 Tests: 5												X							
CEN Readings	All	NDPs: 0 Tests: 41			X			X			X			X			X			X	
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 82	X		X	X		X	X		X	X		X	X		X	X		X	X
Dissolved Metals by ICP-MS	All	NDPs: 0 Tests: 41			X			X			X			X			X			X	
EPH CWG (Aliphatic) Aqueous GC (W)	All	NDPs: 0 Tests: 41			X			X			X			X			X			X	
EPH CWG (Aromatic) Aqueous GC (W)	All	NDPs: 0 Tests: 41			X			X			X			X			X			X	
EPH CWG GC (S)	All	NDPs: 0 Tests: 41	X			X			X			X			X			X			X
GRO by GC-FID (S)	All	NDPs: 0 Tests: 41		X			X			X			X			X			X		
GRO by GC-FID (W)	All	NDPs: 0 Tests: 41			X			X			X			X			X			X	
Mercury Dissolved	All	NDPs: 0 Tests: 41			X			X			X			X			X			X	
Metals in solid samples by OES	All	NDPs: 0 Tests: 41	X			X			X			X			X			X			X
PAH by GCMS	All	NDPs: 0 Tests: 41	X			X			X			X			X			X			X

20928385	W99-04		0.00 - 0.00	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)
				1kg TUB		1kg TUB		1kg TUB		1kg TUB		1kg TUB		1kg TUB		1kg TUB	
20928378	W99-03		0.00 - 0.00	S	S	S	S	S	S	S	S	S	S	S	S	S	S
				X				X		X		X		X		X	
20928373	W99-02		0.00 - 0.00			X				X		X		X		X	
				X				X		X		X		X		X	
20928369	W99-01		0.00 - 0.00			X				X		X		X		X	
				X				X		X		X		X		X	
20928365	W98-04		0.00 - 0.00			X				X		X		X		X	
				X				X		X		X		X		X	
20928360	W98-03		0.00 - 0.00			X				X		X		X		X	
				X				X		X		X		X		X	
20928354	W98-02		0.00 - 0.00			X				X		X		X		X	
				X				X		X		X		X		X	
20928349	W98-01		0.00 - 0.00			X				X		X		X		X	
				X				X		X		X		X		X	
S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)

Validated

CERTIFICATE OF ANALYSIS

SDG:	191012-76	**Client Reference:**		**Report Number:**	527515
Location:	Llanwern	**Order Number:**	LLA681	**Superseded Report:**	527504

Results Legend

X Test

N No Determination Possible

Sample Types -

S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

			Lab Sample No(s)	Customer Sample Reference	AGS Reference	Depth (m)	Container	Sample Type
PAH Spec MS - Aqueous (W)	All	NDPs: 0 Tests: 41	20928284	W97-01		0.00 - 0.00	1kg TUB	S
			20928292	W97-02		0.00 - 0.00	1kg TUB	S
			20928300	W97-03		0.00 - 0.00	1kg TUB	S
			20928310	W97-04		0.00 - 0.00	1kg TUB	S
			20928321	W97-05		0.00 - 0.00	1kg TUB	S
			20928330	W97-06		0.00 - 0.00	1kg TUB	S
			20928349	W98-01		0.00 - 0.00	1kg TUB	S
pH	All	NDPs: 0 Tests: 41	20928284	W97-01		0.00 - 0.00	250g Amber Jar (ALE210)	S
			20928292	W97-02		0.00 - 0.00	250g Amber Jar (ALE210)	S
			20928300	W97-03		0.00 - 0.00	250g Amber Jar (ALE210)	S
			20928310	W97-04		0.00 - 0.00	250g Amber Jar (ALE210)	S
			20928321	W97-05		0.00 - 0.00	250g Amber Jar (ALE210)	S
			20928330	W97-06		0.00 - 0.00	250g Amber Jar (ALE210)	S
			20928349	W98-01		0.00 - 0.00	250g Amber Jar (ALE210)	S
pH Value	All	NDPs: 0 Tests: 41	20928284	W97-01		0.00 - 0.00	1kg TUB	S
			20928292	W97-02		0.00 - 0.00	1kg TUB	S
			20928300	W97-03		0.00 - 0.00	1kg TUB	S
			20928310	W97-04		0.00 - 0.00	1kg TUB	S
			20928321	W97-05		0.00 - 0.00	1kg TUB	S
			20928330	W97-06		0.00 - 0.00	1kg TUB	S
			20928349	W98-01		0.00 - 0.00	1kg TUB	S
Phenols by HPLC (S)	All	NDPs: 0 Tests: 41	20928284	W97-01		0.00 - 0.00	250g Amber Jar (ALE210)	S
			20928292	W97-02		0.00 - 0.00	250g Amber Jar (ALE210)	S
			20928300	W97-03		0.00 - 0.00	250g Amber Jar (ALE210)	S
			20928310	W97-04		0.00 - 0.00	250g Amber Jar (ALE210)	S
			20928321	W97-05		0.00 - 0.00	250g Amber Jar (ALE210)	S
			20928330	W97-06		0.00 - 0.00	250g Amber Jar (ALE210)	S
			20928349	W98-01		0.00 - 0.00	250g Amber Jar (ALE210)	S
Sample description	All	NDPs: 0 Tests: 41	20928284	W97-01		0.00 - 0.00	250g Amber Jar (ALE210)	S
			20928292	W97-02		0.00 - 0.00	250g Amber Jar (ALE210)	S
			20928300	W97-03		0.00 - 0.00	250g Amber Jar (ALE210)	S
			20928310	W97-04		0.00 - 0.00	250g Amber Jar (ALE210)	S
			20928321	W97-05		0.00 - 0.00	250g Amber Jar (ALE210)	S
			20928330	W97-06		0.00 - 0.00	250g Amber Jar (ALE210)	S
			20928349	W98-01		0.00 - 0.00	250g Amber Jar (ALE210)	S
Total Organic Carbon	All	NDPs: 0 Tests: 41	20928284	W97-01		0.00 - 0.00	250g Amber Jar (ALE210)	S
			20928292	W97-02		0.00 - 0.00	250g Amber Jar (ALE210)	S
			20928300	W97-03		0.00 - 0.00	250g Amber Jar (ALE210)	S
			20928310	W97-04		0.00 - 0.00	250g Amber Jar (ALE210)	S
			20928321	W97-05		0.00 - 0.00	250g Amber Jar (ALE210)	S
			20928330	W97-06		0.00 - 0.00	250g Amber Jar (ALE210)	S
			20928349	W98-01		0.00 - 0.00	250g Amber Jar (ALE210)	S
TPH CWG (W)	All	NDPs: 0 Tests: 41	20928284	W97-01		0.00 - 0.00	1kg TUB	S
			20928292	W97-02		0.00 - 0.00	1kg TUB	S
			20928300	W97-03		0.00 - 0.00	1kg TUB	S
			20928310	W97-04		0.00 - 0.00	1kg TUB	S
			20928321	W97-05		0.00 - 0.00	1kg TUB	S
			20928330	W97-06		0.00 - 0.00	1kg TUB	S
			20928349	W98-01		0.00 - 0.00	1kg TUB	S
TPH CWG GC (S)	All	NDPs: 0 Tests: 41	20928284	W97-01		0.00 - 0.00	250g Amber Jar (ALE210)	S
			20928292	W97-02		0.00 - 0.00	250g Amber Jar (ALE210)	S
			20928300	W97-03		0.00 - 0.00	250g Amber Jar (ALE210)	S
			20928310	W97-04		0.00 - 0.00	250g Amber Jar (ALE210)	S
			20928321	W97-05		0.00 - 0.00	250g Amber Jar (ALE210)	S
			20928330	W97-06		0.00 - 0.00	250g Amber Jar (ALE210)	S
			20928349	W98-01		0.00 - 0.00	250g Amber Jar (ALE210)	S
VOC MS (S)	All	NDPs: 0 Tests: 41	20928284	W97-01		0.00 - 0.00	60g VOC (ALE215)	S
			20928292	W97-02		0.00 - 0.00	60g VOC (ALE215)	S
			20928300	W97-03		0.00 - 0.00	60g VOC (ALE215)	S
			20928310	W97-04		0.00 - 0.00	60g VOC (ALE215)	S
			20928321	W97-05		0.00 - 0.00	60g VOC (ALE215)	S
			20928330	W97-06		0.00 - 0.00	60g VOC (ALE215)	S
			20928349	W98-01		0.00 - 0.00	60g VOC (ALE215)	S

20928385	W99-04		0.00 - 0.00	250g Amber Jar (ALE210)	1kg TUB	60g VOC (ALE215)
S	S	S	S	S	S	S
	X			X		
X					X	
	X			X		
X					X	
X					X	
X					X	
	X			X		
X					X	
		X				
20928378	W99-03		0.00 - 0.00	250g Amber Jar (ALE210)	1kg TUB	60g VOC (ALE215)
S	S	S	S	S	S	S
	X			X		
X					X	
	X			X		
X					X	
X					X	
X					X	
	X			X		
X					X	
		X				
20928373	W99-02		0.00 - 0.00	250g Amber Jar (ALE210)	1kg TUB	60g VOC (ALE215)
S	S	S	S	S	S	S
	X			X		
X					X	
	X			X		
X					X	
X					X	
X					X	
	X			X		
X					X	
		X				
20928369	W99-01		0.00 - 0.00	250g Amber Jar (ALE210)	1kg TUB	60g VOC (ALE215)
S	S	S	S	S	S	S
	X			X		
X					X	
	X			X		
X					X	
X					X	
X					X	
	X			X		
X					X	
		X				
20928365	W98-04		0.00 - 0.00	250g Amber Jar (ALE210)	1kg TUB	60g VOC (ALE215)
S	S	S	S	S	S	S
	X			X		
X					X	
	X			X		
X					X	
X					X	
X					X	
	X			X		
X					X	
		X				
20928360	W98-03		0.00 - 0.00	250g Amber Jar (ALE210)	1kg TUB	60g VOC (ALE215)
S	S	S	S	S	S	S
	X			X		
X					X	
	X			X		
X					X	
X					X	
X					X	
	X			X		
X					X	
		X				
20928354	W98-02		0.00 - 0.00	250g Amber Jar (ALE210)	1kg TUB	60g VOC (ALE215)
S	S	S	S	S	S	S
	X			X		
X					X	
	X			X		
X					X	
X					X	
X					X	
	X			X		
X					X	
		X				
20928349	W98-01		0.00 - 0.00	250g Amber Jar (ALE210)	1kg TUB	60g VOC (ALE215)
S	S	S	S	S	S	S
	X			X		
X					X	
	X			X		
X					X	
X					X	
X					X	
	X			X		
X					X	
		X				

Validated

CERTIFICATE OF ANALYSIS

SDG:	191012-76	**Client Reference:**		**Report Number:**	527515
Location:	Llanwern	**Order Number:**	LLA681	**Superseded Report:**	527504

Results Legend

X Test

N No Determination Possible

Sample Types -

S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

Lab Sample No(s)			20928385	20928390			20928394			20928405			20928412			20928417			20928421	
Customer Sample Reference			W99-04	W99-05			W100-01			W100-02			W100-03			W100-04			W101-01	
AGS Reference																				
Depth (m)			0.00 - 0.00	0.00 - 0.00			0.00 - 0.00			0.00 - 0.00			0.00 - 0.00			0.00 - 0.00			0.00 - 0.00	
Container			60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)
Sample Type			S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
Ammoniacal Nitrogen	All	NDPs: 0 Tests: 41		X			X			X			X			X			X		
Ammonium Soil by Titration	All	NDPs: 0 Tests: 41			X			X			X			X			X			X	
Asbestos ID in Solid Samples	All	NDPs: 0 Tests: 23		X						X						X			X		
Asbestos Quantification - Full	All	NDPs: 0 Tests: 5														X					
CEN Readings	All	NDPs: 0 Tests: 41		X			X			X			X			X			X		
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 82		X	X		X	X		X	X		X	X		X	X		X	X	
Dissolved Metals by ICP-MS	All	NDPs: 0 Tests: 41		X			X			X			X			X			X		
EPH CWG (Aliphatic) Aqueous GC (W)	All	NDPs: 0 Tests: 41		X			X			X			X			X			X		
EPH CWG (Aromatic) Aqueous GC (W)	All	NDPs: 0 Tests: 41		X			X			X			X			X			X		
EPH CWG GC (S)	All	NDPs: 0 Tests: 41			X			X			X			X			X			X	
GRO by GC-FID (S)	All	NDPs: 0 Tests: 41	X			X			X			X			X			X			X
GRO by GC-FID (W)	All	NDPs: 0 Tests: 41		X			X			X			X			X			X		
Mercury Dissolved	All	NDPs: 0 Tests: 41		X			X			X			X			X			X		
Metals in solid samples by OES	All	NDPs: 0 Tests: 41			X			X			X			X			X			X	
PAH by GCMS	All	NDPs: 0 Tests: 41			X			X			X			X			X			X	

20928464	W103-02		0.00 - 0.00	60g VOC (ALE215)	S												x				
				250g Amber Jar (ALE210)	S		x				x					x				x	x	
				1kg TUB	S	x				x	x	x	x	x				x	x			
20928454	W103-01		0.00 - 0.00	60g VOC (ALE215)	S												x				
				250g Amber Jar (ALE210)	S		x				x					x				x	x	
				1kg TUB	S	x		x	x	x	x	x	x	x				x	x			
20928449	W102-03		0.00 - 0.00	60g VOC (ALE215)	S												x				
				250g Amber Jar (ALE210)	S		x				x					x				x	x	
				1kg TUB	S	x		x		x	x	x	x	x				x	x			
20928444	W102-02		0.00 - 0.00	60g VOC (ALE215)	S												x				
				250g Amber Jar (ALE210)	S		x				x					x				x	x	
				1kg TUB	S	x				x	x	x	x	x				x	x			
20928440	W102-01		0.00 - 0.00	60g VOC (ALE215)	S												x				
				250g Amber Jar (ALE210)	S		x				x					x				x	x	
				1kg TUB	S	x		x		x	x	x	x	x				x	x			
20928436	W101-03		0.00 - 0.00	60g VOC (ALE215)	S												x				
				250g Amber Jar (ALE210)	S		x				x					x				x	x	
				1kg TUB	S	x		x		x	x	x	x	x				x	x			
20928430	W101-02		0.00 - 0.00	60g VOC (ALE215)	S												x				
				250g Amber Jar (ALE210)	S		x				x					x				x	x	
				1kg TUB	S	x				x	x	x	x	x				x	x			

Validated

CERTIFICATE OF ANALYSIS

SDG:	191012-76	**Client Reference:**		**Report Number:**	527515
Location:	Llanwern	**Order Number:**	LLA681	**Superseded Report:**	527504

Results Legend

X Test

N No Determination Possible

Sample Types -

S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

			Lab Sample No(s)																		
			20928385	20928390			20928394			20928405			20928412			20928417			20928421		
			Customer Sample Reference	W99-04	W99-05			W100-01			W100-02			W100-03			W100-04			W101-01		
			AGS Reference																			
			Depth (m)	0.00 - 0.00	0.00 - 0.00			0.00 - 0.00			0.00 - 0.00			0.00 - 0.00			0.00 - 0.00			0.00 - 0.00		
			Container	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)
			Sample Type	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
PAH Spec MS - Aqueous (W)	All	NDPs: 0 Tests: 41		X			X			X			X			X			X		
pH	All	NDPs: 0 Tests: 41			X			X			X			X			X			X		
pH Value	All	NDPs: 0 Tests: 41		X			X			X			X			X			X		
Phenols by HPLC (S)	All	NDPs: 0 Tests: 41			X			X			X			X			X			X		
Sample description	All	NDPs: 0 Tests: 41			X			X			X			X			X			X		
Total Organic Carbon	All	NDPs: 0 Tests: 41			X			X			X			X			X			X		
TPH CWG (W)	All	NDPs: 0 Tests: 41		X			X			X			X			X			X		
TPH CWG GC (S)	All	NDPs: 0 Tests: 41			X			X			X			X			X			X		
VOC MS (S)	All	NDPs: 0 Tests: 41	X			X			X			X			X			X			X	

20928464	W103-02		0.00 - 0.00	60g VOC (ALE215)	S									X
				250g Amber Jar (ALE210)	S		X		X	X	X		X	
				1kg TUB	S	X		X				X		
20928454	W103-01		0.00 - 0.00	60g VOC (ALE215)	S									X
				250g Amber Jar (ALE210)	S		X		X	X	X		X	
				1kg TUB	S	X		X				X		
20928449	W102-03		0.00 - 0.00	60g VOC (ALE215)	S									X
				250g Amber Jar (ALE210)	S		X		X	X	X		X	
				1kg TUB	S	X		X				X		
20928444	W102-02		0.00 - 0.00	60g VOC (ALE215)	S									X
				250g Amber Jar (ALE210)	S		X		X	X	X		X	
				1kg TUB	S	X		X				X		
20928440	W102-01		0.00 - 0.00	60g VOC (ALE215)	S									X
				250g Amber Jar (ALE210)	S		X		X	X	X		X	
				1kg TUB	S	X		X				X		
20928436	W101-03		0.00 - 0.00	60g VOC (ALE215)	S									X
				250g Amber Jar (ALE210)	S		X		X	X	X		X	
				1kg TUB	S	X		X				X		
20928430	W101-02		0.00 - 0.00	60g VOC (ALE215)	S									X
				250g Amber Jar (ALE210)	S		X		X	X	X		X	
				1kg TUB	S	X		X				X		

Validated

CERTIFICATE OF ANALYSIS

SDG:	191012-76	**Client Reference:**		**Report Number:**	527515
Location:	Llanwern	**Order Number:**	LLA681	**Superseded Report:**	527504

Results Legend

X Test

N No Determination Possible

Sample Types -

S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

			Lab Sample No(s)			20928469
			Customer Sample Reference			W103-03
			AGS Reference			
			Depth (m)			0.00 - 0.00
			Container	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)
			Sample Type	S	S	S
Ammoniacal Nitrogen	All	NDPs: 0 Tests: 41		X		
Ammonium Soil by Titration	All	NDPs: 0 Tests: 41			X	
Asbestos ID in Solid Samples	All	NDPs: 0 Tests: 23		X		
Asbestos Quantification - Full	All	NDPs: 0 Tests: 5		X		
CEN Readings	All	NDPs: 0 Tests: 41		X		
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 82		X	X	
Dissolved Metals by ICP-MS	All	NDPs: 0 Tests: 41		X		
EPH CWG (Aliphatic) Aqueous GC (W)	All	NDPs: 0 Tests: 41		X		
EPH CWG (Aromatic) Aqueous GC (W)	All	NDPs: 0 Tests: 41		X		
EPH CWG GC (S)	All	NDPs: 0 Tests: 41			X	
GRO by GC-FID (S)	All	NDPs: 0 Tests: 41				X
GRO by GC-FID (W)	All	NDPs: 0 Tests: 41		X		
Mercury Dissolved	All	NDPs: 0 Tests: 41		X		
Metals in solid samples by OES	All	NDPs: 0 Tests: 41			X	
PAH by GCMS	All	NDPs: 0 Tests: 41			X	

CERTIFICATE OF ANALYSIS

SDG:	191012-76	**Client Reference:**		**Report Number:**	527515
Location:	Llanwern	**Order Number:**	LLA681	**Superseded Report:**	527504

Results Legend

X **Test**

N **No Determination Possible**

Sample Types -

S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

Lab Sample No(s)			20928469		
Customer Sample Reference			W103-03		
AGS Reference					
Depth (m)			0.00 - 0.00		
Container			1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)
Sample Type			S	S	S
PAH Spec MS - Aqueous (W)	All	NDPs: 0 Tests: 41	X		
pH	All	NDPs: 0 Tests: 41		X	
pH Value	All	NDPs: 0 Tests: 41	X		
Phenols by HPLC (S)	All	NDPs: 0 Tests: 41		X	
Sample description	All	NDPs: 0 Tests: 41		X	
Total Organic Carbon	All	NDPs: 0 Tests: 41		X	
TPH CWG (W)	All	NDPs: 0 Tests: 41	X		
TPH CWG GC (S)	All	NDPs: 0 Tests: 41		X	
VOC MS (S)	All	NDPs: 0 Tests: 41			X

CERTIFICATE OF ANALYSIS

SDG:	191012-76	**Client Reference:**		**Report Number:**	527515
Location:	Llanwern	**Order Number:**	LLA681	**Superseded Report:**	527504

Sample Descriptions

Grain Sizes

very fine	<0.063mm	fine	0.063mm - 0.1mm	medium	0.1mm - 2mm	coarse	2mm - 10mm	very coarse	>10mm

Lab Sample No(s)	Customer Sample Ref.	Depth (m)	Colour	Description	Inclusions	Inclusions 2
20928248	W94-01	0.00 - 0.00	Dark Brown	Sand	Stones	None
20928340	W94-02	0.00 - 0.00	Dark Brown	Sand	Stones	Brick
20928399	W94-03	0.00 - 0.00	Dark Brown	Sand	Stones	None
20928458	W95-01	0.00 - 0.00	Dark Brown	Sand	Stones	None
20928475	W95-02	0.00 - 0.00	Dark Brown	Sand	Stones	Vegetation
20928484	W95-03	0.00 - 0.00	Dark Brown	Sand	Stones	None
20928492	W95-04	0.00 - 0.00	Dark Brown	Sand	Stones	Vegetation
20928497	W96-01	0.00 - 0.00	Dark Brown	Loamy Sand	Stones	Brick
20928504	W96-02	0.00 - 0.00	Dark Brown	Sand	Stones	None
20928253	W96-03	0.00 - 0.00	Dark Brown	Sand	Stones	None
20928264	W96-04	0.00 - 0.00	Dark Brown	Sand	Stones	None
20928269	W96-05	0.00 - 0.00	Dark Brown	Sand	Stones	None
20928278	W96-06	0.00 - 0.00	Dark Brown	Sand	Stones	Vegetation
20928284	W97-01	0.00 - 0.00	Dark Brown	Stone/Soil	Stones	None
20928292	W97-02	0.00 - 0.00	Dark Brown	Loamy Sand	Stones	Vegetation
20928300	W97-03	0.00 - 0.00	Dark Brown	Stone/Soil	Stones	Crushed Brick
20928310	W97-04	0.00 - 0.00	Dark Brown	Loamy Sand	Stones	Vegetation
20928321	W97-05	0.00 - 0.00	Dark Brown	Sand	Stones	None
20928330	W97-06	0.00 - 0.00	Dark Brown	Sand	Stones	Vegetation
20928349	W98-01	0.00 - 0.00	Dark Brown	Sandy Loam	Stones	Crushed Brick
20928354	W98-02	0.00 - 0.00	Dark Brown	Sandy Loam	Stones	Vegetation
20928360	W98-03	0.00 - 0.00	Dark Brown	Sandy Loam	Stones	None
20928365	W98-04	0.00 - 0.00	Dark Brown	Sandy Loam	Stones	None
20928369	W99-01	0.00 - 0.00	Dark Brown	Loamy Sand	Stones	Brick
20928373	W99-02	0.00 - 0.00	Dark Brown	Sand	Stones	Vegetation
20928378	W99-03	0.00 - 0.00	Dark Brown	Loamy Sand	Stones	None
20928385	W99-04	0.00 - 0.00	Dark Brown	Stone/Soil	Stones	Crushed Brick
20928390	W99-05	0.00 - 0.00	Dark Brown	Stone/Soil	Stones	None
20928394	W100-01	0.00 - 0.00	Dark Brown	Loamy Sand	Stones	Brick
20928405	W100-02	0.00 - 0.00	Dark Brown	Loamy Sand	Vegetation	Stones
20928412	W100-03	0.00 - 0.00	Dark Brown	Loamy Sand	Stones	None
20928417	W100-04	0.00 - 0.00	Dark Brown	Loamy Sand	Stones	Vegetation
20928421	W101-01	0.00 - 0.00	Dark Brown	Silty Clay Loam	Stones	Crushed Brick
20928430	W101-02	0.00 - 0.00	Dark Brown	Sandy Loam	Stones	None
20928436	W101-03	0.00 - 0.00	Dark Brown	Sandy Loam	Stones	Crushed Brick
20928440	W102-01	0.00 - 0.00	Dark Brown	Sandy Loam	Stones	N/A
20928444	W102-02	0.00 - 0.00	Dark Brown	Loamy Sand	Stones	None
20928449	W102-03	0.00 - 0.00	Dark Brown	Sandy Loam	Stones	None

CERTIFICATE OF ANALYSIS

SDG:	191012-76	**Client Reference:**		**Report Number:**	527515
Location:	Llanwern	**Order Number:**	LLA681	**Superseded Report:**	527504

			Colour	Description	Inclusions	Inclusions 2
20928454	W103-01	0.00 - 0.00	Dark Brown	Loamy Sand	Stones	None
20928464	W103-02	0.00 - 0.00	Grey	N/A	Stones	None
20928469	W103-03	0.00 - 0.00	Dark Brown	Loamy Sand	Stones	None

These descriptions are only intended to act as a cross check if sample identities are questioned, and to provide a log of sample matrices with respect to MCERTS validation. They are not intended as full geological descriptions.

We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally ocurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample.

Other coarse granular materials such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

Validated

CERTIFICATE OF ANALYSIS

SDG:	191012-76	**Client Reference:**		**Report Number:**	527515
Location:	Llanwern	**Order Number:**	LLA681	**Superseded Report:**	527504

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-3+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	W94-01	W94-02	W94-03	W95-01	W95-02	W95-03
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	10/10/2019	10/10/2019	10/10/2019	10/10/2019	10/10/2019	10/10/2019
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	12/10/2019	12/10/2019	12/10/2019	12/10/2019	12/10/2019	12/10/2019
			SDG Ref	191012-76	191012-76	191012-76	191012-76	191012-76	191012-76
			Lab Sample No.(s)	20928248	20928340	20928399	20928458	20928475	20928484
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		10	10	8.6	10	9.7	9.5
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	<12 M	<12 M	<12 M	<12 M	<12 M
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 ♦ M	<0.01 ♦ M	<0.01 ♦ M	<0.01 ♦ M	<0.01 ♦ M	<0.01 ♦ M
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 ♦ M	<0.01 ♦ M	<0.01 ♦ M	<0.01 ♦ M	<0.01 ♦ M	<0.01 ♦ M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 ♦ M	<0.015 ♦ M	<0.015 ♦ M	<0.015 ♦ M	<0.015 ♦ M	<0.015 ♦ M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 ♦ M	<0.035 ♦ M	<0.035 ♦ M	<0.035 ♦ M	<0.035 ♦ M	<0.035 ♦ M
Soil Organic Matter (SOM)	<0.35 %	TM132		2.16 #	3.91 #	1.16 #	2.88 #	1.69 #	2.02 #
pH	1 pH Units	TM133		11.6 M	11.1 M	11.9 M	11.4 M	11.4 M	11.7 M
Cyanide, Total	<1 mg/kg	TM153		<1 M	<1 M	<1 M	<1 M	<1 M	<1 M
Cyanide, Free	<1 mg/kg	TM153		<1 M	<1 M	<1 M	<1 M	<1 M	<1 M
Arsenic	<0.6 mg/kg	TM181		6.48 M	11 M	5.29 M	7.89 M	7.31 M	4.55 M
Cadmium	<0.02 mg/kg	TM181		<0.02 M	0.849 M	<0.02 M	0.0883 M	<0.02 M	<0.02 M
Chromium	<0.9 mg/kg	TM181		260 M	128 M	280 M	258 M	267 M	379 M
Copper	<1.4 mg/kg	TM181		11.1 M	37.8 M	8.32 M	22 M	15.9 M	10.9 M
Iron	<1000 mg/kg	TM181		121000 #	68300 #	142000 #	101000 #	121000 #	137000 #
Lead	<0.7 mg/kg	TM181		51.9 M	172 M	24.6 M	67.7 M	42.1 M	28.9 M
Manganese	<0.13 mg/kg	TM181		18200 M	10200 M	25000 M	23700 M	26900 M	28000 M
Mercury	<0.14 mg/kg	TM181		<0.14 M	<0.14 M	<0.14 M	<0.14 M	<0.14 M	<0.14 M
Nickel	<0.2 mg/kg	TM181		11.6 M	18.7 M	5.65 M	10.1 M	13.6 M	7.5 M
Selenium	<1 mg/kg	TM181		6.27 #	4.46 #	8.42 #	9.59 #	11.2 #	8.2 #
Vanadium	<0.2 mg/kg	TM181		487 #	189 #	675 #	379 #	625 #	438 #
Zinc	<1.9 mg/kg	TM181		193 M	553 M	147 M	397 M	307 M	117 M

Validated

CERTIFICATE OF ANALYSIS

SDG:	191012-76	**Client Reference:**		**Report Number:**	527515
Location:	Llanwern	**Order Number:**	LLA681	**Superseded Report:**	527504

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-3+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	W95-04	W96-01	W96-02	W96-03	W96-04	W96-05
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	10/10/2019	10/10/2019	10/10/2019	10/10/2019	10/10/2019	10/10/2019
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	12/10/2019	12/10/2019	12/10/2019	12/10/2019	12/10/2019	12/10/2019
			SDG Ref	191012-76	191012-76	191012-76	191012-76	191012-76	191012-76
			Lab Sample No.(s)	20928492	20928497	20928504	20928253	20928264	20928269
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		11	9.8	12	8.2	11	8.7
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	<12 M	<12 M	<12 M	<12 M	<12 M
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 ♦ M	<0.01 ♦ M	<0.01 ♦ M	<0.01 ♦ M	<0.01 ♦ M	<0.01 ♦ M
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 ♦ M	<0.01 ♦ M	<0.01 ♦ M	<0.01 ♦ M	<0.01 ♦ M	<0.01 ♦ M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 ♦ M	<0.015 ♦ M	<0.015 ♦ M	<0.015 ♦ M	<0.015 ♦ M	<0.015 ♦ M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 ♦ M	<0.035 ♦ M	<0.035 ♦ M	<0.035 ♦ M	<0.035 ♦ M	<0.035 ♦ M
Soil Organic Matter (SOM)	<0.35 %	TM132		2.41 #	3.15 #	1.86 #	1.86 #	2.24 #	2.02 #
pH	1 pH Units	TM133		10.6 M	10.5 M	10.9 M	11.5 M	11.6 M	11.5 M
Cyanide, Total	<1 mg/kg	TM153		<1 M	<1 M	<1 M	<1 M	<1 M	<1 M
Cyanide, Free	<1 mg/kg	TM153		<1 M	<1 M	<1 M	<1 M	<1 M	<1 M
Arsenic	<0.6 mg/kg	TM181		7.55 M	24.9 M	16.1 M	<6 M	4.18 M	<6 M
Cadmium	<0.02 mg/kg	TM181		<0.02 M	0.499 M	0.375 M	<0.02 M	<0.02 M	<0.02 M
Chromium	<0.9 mg/kg	TM181		234 M	210 M	211 M	300 M	268 M	266 M
Copper	<1.4 mg/kg	TM181		17.2 M	39 M	23.6 M	18.5 M	8.45 M	15 M
Iron	<1000 mg/kg	TM181		124000 #	90600 #	97400 #	194000 #	99800 #	116000 #
Lead	<0.7 mg/kg	TM181		47 M	81.1 M	68.8 M	29.5 M	23.1 M	41 M
Manganese	<0.13 mg/kg	TM181		18200 M	18000 M	20700 M	25400 M	24300 M	24400 M
Mercury	<0.14 mg/kg	TM181		<0.14 M	<0.14 M	<0.14 M	<0.14 M	<0.14 M	<0.14 M
Nickel	<0.2 mg/kg	TM181		9.06 M	13.8 M	12.4 M	7.5 M	7.11 M	6.17 M
Selenium	<1 mg/kg	TM181		7.55 #	7.64 #	6.38 #	7 #	8.58 #	11.2 #
Vanadium	<0.2 mg/kg	TM181		359 #	389 #	266 #	426 #	382 #	420 #
Zinc	<1.9 mg/kg	TM181		213 M	758 M	446 M	58.2 M	65.2 M	241 M

Validated

CERTIFICATE OF ANALYSIS

SDG:	191012-76	**Client Reference:**		**Report Number:**	527515
Location:	Llanwern	**Order Number:**	LLA681	**Superseded Report:**	527504

Results Legend	
#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-3+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	W96-06	W97-01	W97-02	W97-03	W97-04	W97-05
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	10/10/2019	10/10/2019	10/10/2019	10/10/2019	10/10/2019	10/10/2019
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	12/10/2019	12/10/2019	12/10/2019	12/10/2019	12/10/2019	12/10/2019
			SDG Ref	191012-76	191012-76	191012-76	191012-76	191012-76	191012-76
			Lab Sample No.(s)	20928278	20928284	20928292	20928300	20928310	20928321
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		11	8.1	11	7.8	9.7	8.6
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	<12 #	<12 M	<12 M	<12 M	<12 M
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 ♦ M	<0.01 ♦ #	<0.01 ♦ M	<0.01 ♦ M	<0.01 ♦ M	<0.01 ♦ M
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 ♦ M	<0.01 ♦ #	<0.01 ♦ M	<0.01 ♦ M	<0.01 ♦ M	<0.01 ♦ M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 ♦ M	<0.015 ♦ #	<0.015 ♦ M	<0.015 ♦ M	<0.015 ♦ M	<0.015 ♦ M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 ♦ M	<0.035 ♦ #	<0.035 ♦ M	<0.035 ♦ M	<0.035 ♦ M	<0.035 ♦ M
Soil Organic Matter (SOM)	<0.35 %	TM132		2.21 #	1.7 #	2.52 #	1.66 #	2.16 #	2.09 #
pH	1 pH Units	TM133		11.2 M	11.8 #	11 M	10.5 M	9.4 M	11.8 M
Cyanide, Total	<1 mg/kg	TM153		<1 M	<1 #	<1 M	<1 M	<1 M	<1 M
Cyanide, Free	<1 mg/kg	TM153		<1 M	<1 #	<1 M	<1 M	<1 M	<1 M
Arsenic	<0.6 mg/kg	TM181		53.6 M	5.11 #	13.6 M	9.36 M	14.2 M	8.3 M
Cadmium	<0.02 mg/kg	TM181		0.561 M	<0.02 #	0.276 M	0.236 M	0.276 M	<0.02 M
Chromium	<0.9 mg/kg	TM181		106 M	271 #	45.5 M	43.6 M	95.4 M	250 M
Copper	<1.4 mg/kg	TM181		54.7 M	25.3 #	22.6 M	14.8 M	34.7 M	25.8 M
Iron	<1000 mg/kg	TM181		62700 #	143000 #	48100 #	46900 #	68200 #	160000 #
Lead	<0.7 mg/kg	TM181		83.8 M	46.3 #	49.6 M	45.8 M	52.3 M	31 M
Manganese	<0.13 mg/kg	TM181		9160 M	31400 #	8790 M	3990 M	7140 M	27900 M
Mercury	<0.14 mg/kg	TM181		<0.14 M	<0.14 #	<0.14 M	<0.14 M	<0.14 M	<0.14 M
Nickel	<0.2 mg/kg	TM181		13 M	10.3 #	19.5 M	15.5 M	21.3 M	10.7 M
Selenium	<1 mg/kg	TM181		3.64 #	10.7 #	3.64 #	1.39 #	4.13 #	8.09 #
Vanadium	<0.2 mg/kg	TM181		155 #	489 #	93.1 #	66.2 #	183 #	398 #
Zinc	<1.9 mg/kg	TM181		1150 M	115 #	253 M	271 M	329 M	162 M
Asbestos Quantification - Gravimetric - %	<0.001 %	TM304			<0.001 #				<0.001 #
Asbestos Quantification - PCOM Evaluation - %	<0.001 %	TM304			<0.001 #				<0.001 #
Additional Asbestos Components (Using TM048)		TM304			None #				None #
Analysts Comments		TM304			N/C				N/A
Asbestos Quantification - Total - %	<0.001 %	TM304			<0.001 #				<0.001 #

Validated

CERTIFICATE OF ANALYSIS

SDG:	191012-76	**Client Reference:**		**Report Number:**	527515
Location:	Llanwern	**Order Number:**	LLA681	**Superseded Report:**	527504

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-3+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	W97-06	W98-01	W98-02	W98-03	W98-04	W99-01
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	10/10/2019	10/10/2019	10/10/2019	10/10/2019	10/10/2019	10/10/2019
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	12/10/2019	12/10/2019	12/10/2019	12/10/2019	12/10/2019	12/10/2019
			SDG Ref	191012-76	191012-76	191012-76	191012-76	191012-76	191012-76
			Lab Sample No.(s)	20928330	20928349	20928354	20928360	20928365	20928369
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		10	7.3	8.6	11	15	14
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	<12 M	<12 M	<12 M	<12 M	<12 M
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 ♦ M	<0.01 ♦ M	<0.01 ♦ M	<0.01 ♦ M	<0.01 ♦ M	<0.01 ♦ M
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 ♦ M	<0.01 ♦ M	<0.01 ♦ M	<0.01 ♦ M	<0.01 ♦ M	<0.01 ♦ M
Xylenols	<0.015 mg/kg	TM062 (S)		0.0222 ♦ M	<0.015 ♦ M	<0.015 ♦ M	<0.015 ♦ M	<0.015 ♦ M	<0.015 ♦ M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 ♦ M	<0.035 ♦ M	<0.035 ♦ M	<0.035 ♦ M	<0.035 ♦ M	<0.035 ♦ M
Soil Organic Matter (SOM)	<0.35 %	TM132		2.62 #	2.98 #	2.47 #	6.53 #	6.4 #	3.24 #
pH	1 pH Units	TM133		11 M	9.58 M	9.73 M	9.86 M	12.8 M	12.8 M
Cyanide, Total	<1 mg/kg	TM153		<1 M	<1 M	<1 M	<1 M	<1 M	<1 M
Cyanide, Free	<1 mg/kg	TM153		<1 M	<1 M	<1 M	<1 M	<1 M	<1 M
Arsenic	<0.6 mg/kg	TM181		27.3 M	6.5 M	6.96 M	8.38 M	8.49 M	<6 M
Cadmium	<0.02 mg/kg	TM181		0.174 M	0.386 M	0.127 M	0.918 M	<0.02 M	<0.02 M
Chromium	<0.9 mg/kg	TM181		97.5 M	27.8 M	47.6 M	310 M	257 M	279 M
Copper	<1.4 mg/kg	TM181		28.6 M	16.2 M	12.3 M	27.9 M	12.5 M	<14 M
Iron	<1000 mg/kg	TM181		80200 #	25100 #	28600 #	93100 #	157000 #	136000 #
Lead	<0.7 mg/kg	TM181		45.7 M	52.2 M	115 M	160 M	112 M	63.2 M
Manganese	<0.13 mg/kg	TM181		11200 M	2810 M	4310 M	19700 M	20700 M	19600 M
Mercury	<0.14 mg/kg	TM181		<0.14 M	<0.14 M	<0.14 M	<0.14 M	<0.14 M	<0.14 M
Nickel	<0.2 mg/kg	TM181		17.9 M	12.3 M	12.9 M	16.7 M	12.1 M	8.48 M
Selenium	<1 mg/kg	TM181		4.53 #	<1 #	1.73 #	6.92 #	5.87 #	7.37 #
Vanadium	<0.2 mg/kg	TM181		208 #	55.6 #	58.8 #	449 #	417 #	353 #
Zinc	<1.9 mg/kg	TM181		402 M	83.9 M	103 M	419 M	423 M	115 M

Validated

CERTIFICATE OF ANALYSIS

SDG:	191012-76	**Client Reference:**		**Report Number:**	527515
Location:	Llanwern	**Order Number:**	LLA681	**Superseded Report:**	527504

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-3+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	W99-02	W99-03	W99-04	W99-05	W100-01	W100-02
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	10/10/2019	10/10/2019	10/10/2019	10/10/2019	10/10/2019	10/10/2019
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	12/10/2019	12/10/2019	12/10/2019	12/10/2019	12/10/2019	12/10/2019
			SDG Ref	191012-76	191012-76	191012-76	191012-76	191012-76	191012-76
			Lab Sample No.(s)	20928373	20928378	20928385	20928390	20928394	20928405
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		8.3	11	9.4	8.3	14	10
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	<12 M	<12 M	<12 #	<12 M	<12 M
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 ♦ M	<0.01 ♦ M	<0.01 ♦ M	<0.01 ♦ #	0.0117 ♦ M	<0.01 ♦ M
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 ♦ M	<0.01 ♦ M	<0.01 ♦ M	<0.01 ♦ #	<0.01 ♦ M	<0.01 ♦ M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 ♦ M	<0.015 ♦ M	<0.015 ♦ M	<0.015 ♦ #	<0.015 ♦ M	<0.015 ♦ M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 ♦ M	<0.035 ♦ M	<0.035 ♦ M	<0.035 ♦ #	<0.035 ♦ M	<0.035 ♦ M
Soil Organic Matter (SOM)	<0.35 %	TM132		2.12 #	3.64 #	2.79 #	5.53 #	2.79 #	3.76 #
pH	1 pH Units	TM133		9.08 M	12.4 M	12.7 M	11.8 #	12.8 M	12.1 M
Cyanide, Total	<1 mg/kg	TM153		<1 M	<1 M	<1 M	<1 #	<1 M	<1 M
Cyanide, Free	<1 mg/kg	TM153		<1 M	<1 M	<1 M	<1 #	<1 M	<1 M
Arsenic	<0.6 mg/kg	TM181		9.85 M	7.56 M	6.33 M	6.72 #	8.94 M	7.46 M
Cadmium	<0.02 mg/kg	TM181		<0.02 M	<0.02 M	<0.02 M	<0.02 #	0.0387 M	0.257 M
Chromium	<0.9 mg/kg	TM181		43.8 M	211 M	382 M	177 #	68.2 M	57.2 M
Copper	<1.4 mg/kg	TM181		21.8 M	20.2 M	14.4 M	18.6 #	13.6 M	22.7 M
Iron	<1000 mg/kg	TM181		102000 #	127000 #	120000 #	148000 #	90200 #	48900 #
Lead	<0.7 mg/kg	TM181		63.1 M	74.9 M	72.4 M	104 #	141 M	91.8 M
Manganese	<0.13 mg/kg	TM181		8500 M	16400 M	16200 M	13400 #	6640 M	14400 M
Mercury	<0.14 mg/kg	TM181		<0.14 M	<0.14 M	<0.14 M	<0.14 #	<0.14 M	<0.14 M
Nickel	<0.2 mg/kg	TM181		14.1 M	11.4 M	13.7 M	11.2 #	12.4 M	14 M
Selenium	<1 mg/kg	TM181		3.37 #	4.97 #	5.9 #	6.67 #	2.21 #	6.24 #
Vanadium	<0.2 mg/kg	TM181		107 #	309 #	315 #	201 #	135 #	75.6 #
Zinc	<1.9 mg/kg	TM181		83.1 M	368 M	365 M	342 #	128 M	160 M

Validated

CERTIFICATE OF ANALYSIS

SDG:	191012-76	**Client Reference:**		**Report Number:**	527515
Location:	Llanwern	**Order Number:**	LLA681	**Superseded Report:**	527504

Results Legend	
#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-3+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	W100-03	W100-04	W101-01	W101-02	W101-03	W102-01
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	10/10/2019	10/10/2019	10/10/2019	10/10/2019	10/10/2019	11/10/2019
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	12/10/2019	12/10/2019	12/10/2019	12/10/2019	12/10/2019	12/10/2019
			SDG Ref	191012-76	191012-76	191012-76	191012-76	191012-76	191012-76
			Lab Sample No.(s)	20928412	20928417	20928421	20928430	20928436	20928440
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		11	10	12	9.1	12	21
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	37.6 M	<12 M	<12 M	<12 M	<12 M
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 ♦ M	<0.01 ♦ M	<0.01 ♦ M	<0.01 ♦ M	<0.01 ♦ M	<0.01 ♦ M
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 ♦ M	<0.01 ♦ M	<0.01 ♦ M	<0.01 ♦ M	<0.01 ♦ M	<0.01 ♦ M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 ♦ M	<0.015 ♦ M	<0.015 ♦ M	<0.015 ♦ M	<0.015 ♦ M	<0.015 ♦ M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 ♦ M	<0.035 ♦ M	<0.035 ♦ M	<0.035 ♦ M	<0.035 ♦ M	<0.035 ♦ M
Soil Organic Matter (SOM)	<0.35 %	TM132		2.64 #	5.98 #	2.03 #	2.22 #	14 #	4.21 #
pH	1 pH Units	TM133		11.9 M	10.6 M	12.7 M	12.2 M	11.1 M	12.7 M
Cyanide, Total	<1 mg/kg	TM153		<1 M	<1 M	<1 M	<1 M	<1 M	<1 M
Cyanide, Free	<1 mg/kg	TM153		<1 M	<1 M	<1 M	<1 M	<1 M	<1 M
Arsenic	<0.6 mg/kg	TM181		6.64 M	12.2 M	<6 M	5 M	13.6 M	6.67 M
Cadmium	<0.02 mg/kg	TM181		0.114 M	<0.02 M	<0.02 M	<0.02 M	0.354 M	<0.02 M
Chromium	<0.9 mg/kg	TM181		314 M	259 M	372 M	308 M	132 M	256 M
Copper	<1.4 mg/kg	TM181		16.6 M	32.2 M	14.4 M	10.3 M	34.3 M	10.2 M
Iron	<1000 mg/kg	TM181		107000 #	137000 #	157000 #	141000 #	166000 #	137000 #
Lead	<0.7 mg/kg	TM181		48.1 M	316 M	31.6 M	60.6 M	121 M	48.8 M
Manganese	<0.13 mg/kg	TM181		17000 M	16000 M	24100 M	23400 M	12200 M	27100 M
Mercury	<0.14 mg/kg	TM181		<0.14 M	1.39 M	<0.14 M	<0.14 M	<0.14 M	<0.14 M
Nickel	<0.2 mg/kg	TM181		14.1 M	19.5 M	8.36 M	7.21 M	29.6 M	8.25 M
Selenium	<1 mg/kg	TM181		6.63 #	6.91 #	9.06 #	9.88 #	3.2 #	9.08 #
Vanadium	<0.2 mg/kg	TM181		400 #	446 #	479 #	341 #	241 #	339 #
Zinc	<1.9 mg/kg	TM181		144 M	733 M	108 M	198 M	497 M	102 M
Asbestos Quantification - Gravimetric - %	<0.001 %	TM304			<0.001 #				
Asbestos Quantification - PCOM Evaluation - %	<0.001 %	TM304			<0.001 #				
Additional Asbestos Components (Using TM048)		TM304			None #				
Analysts Comments		TM304			N/C				
Asbestos Quantification - Total - %	<0.001 %	TM304			<0.001 #				

Validated

CERTIFICATE OF ANALYSIS

SDG:	191012-76	**Client Reference:**		**Report Number:**	527515
Location:	Llanwern	**Order Number:**	LLA681	**Superseded Report:**	527504

Results Legend	
#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-3+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	W102-02	W102-03	W103-01	W103-02	W103-03
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	11/10/2019	11/10/2019	11/10/2019	11/10/2019	11/10/2019
			Sample Time	00:00	00:00	00:00	00:00	00:00
			Date Received	12/10/2019	12/10/2019	12/10/2019	12/10/2019	12/10/2019
			SDG Ref	191012-76	191012-76	191012-76	191012-76	191012-76
			Lab Sample No.(s)	20928444	20928449	20928454	20928464	20928469
			AGS Reference					
Moisture Content Ratio (% of as received sample)	%	PM024		13	13	13	23	16
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	<12 M	<12 M	<12 #	<12 M
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	0.0115 M	0.013 ♦ #	<0.01 ♦ M
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 ♦ #	<0.01 ♦ M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M	<0.015 M	<0.015 ♦ #	<0.015 ♦ M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 M	<0.035 M	<0.035 ♦ #	<0.035 ♦ M
Soil Organic Matter (SOM)	<0.35 %	TM132		2.91 #	2.07 #	4.47 #	3.28 #	2.12 #
pH	1 pH Units	TM133		12.8 M	12.8 M	12.8 M	12.8 #	12.8 M
Cyanide, Total	<1 mg/kg	TM153		<1 M	<1 M	<1 M	<1 #	<1 M
Cyanide, Free	<1 mg/kg	TM153		<1 M	<1 M	<1 M	<1 #	<1 M
Arsenic	<0.6 mg/kg	TM181		4.94 M	7.25 M	<6 M	4.99 #	<6 M
Cadmium	<0.02 mg/kg	TM181		<0.02 M	<0.02 M	<0.02 M	<0.02 #	<0.02 M
Chromium	<0.9 mg/kg	TM181		359 M	152 M	293 M	130 #	197 M
Copper	<1.4 mg/kg	TM181		10.9 M	8.51 M	19.9 M	10.3 #	<14 M
Iron	<1000 mg/kg	TM181		160000 #	108000 #	126000 #	123000 #	108000 #
Lead	<0.7 mg/kg	TM181		52.1 M	37.9 M	52 M	112 #	36.1 M
Manganese	<0.13 mg/kg	TM181		40100 M	12800 M	25900 M	14200 #	20200 M
Mercury	<0.14 mg/kg	TM181		<0.14 M	<0.14 M	<0.14 M	<0.14 #	<0.14 M
Nickel	<0.2 mg/kg	TM181		5.77 M	12.1 M	5.62 M	10.3 #	5.39 M
Selenium	<1 mg/kg	TM181		11.1 #	4.85 #	9.76 #	3.73 #	8.75 #
Vanadium	<0.2 mg/kg	TM181		696 #	297 #	461 #	188 #	367 #
Zinc	<1.9 mg/kg	TM181		237 M	150 M	112 M	293 #	71.9 M
Asbestos Quantification - Gravimetric - %	<0.001 %	TM304				0.0014 #		<0.001 #
Asbestos Quantification - PCOM Evaluation - %	<0.001 %	TM304				<0.001 #		<0.001 #
Additional Asbestos Components (Using TM048)		TM304				None #		None #
Analysts Comments		TM304				N/A		N/C
Asbestos Quantification - Total - %	<0.001 %	TM304				0.0014 #		<0.001 #

Validated

CERTIFICATE OF ANALYSIS

SDG:	191012-76	**Client Reference:**		**Report Number:**	527515
Location:	Llanwern	**Order Number:**	LLA681	**Superseded Report:**	527504

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-3+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	W94-01	W94-02	W94-03	W95-01	W95-02	W95-03
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	10/10/2019	10/10/2019	10/10/2019	10/10/2019	10/10/2019	10/10/2019
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	12/10/2019	12/10/2019	12/10/2019	12/10/2019	12/10/2019	12/10/2019
			SDG Ref	191012-76	191012-76	191012-76	191012-76	191012-76	191012-76
			Lab Sample No.(s)	20928248	20928340	20928399	20928458	20928475	20928484
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		85.9	84.7	87.5	85.8	86.3	87.9
Acenaphthene-d10 % recovery**	%	TM218		84.5	84.5	86.1	86	84.7	86.3
Phenanthrene-d10 % recovery**	%	TM218		87.1	87.2	88.3	87.6	88.4	87.3
Chrysene-d12 % recovery**	%	TM218		86.5	85.5	88.5	87.2	91.8	92.1
Perylene-d12 % recovery**	%	TM218		85.5	84.4	87.7	87.1	92	93.9
Naphthalene	<0.009 mg/kg	TM218		0.045 M	0.0388 M	0.0243 M	0.0404 M	0.0747 M	0.0398 M
Acenaphthylene	<0.012 mg/kg	TM218		0.0266 M	0.0468 M	0.0225 M	0.0427 M	0.359 M	0.0634 M
Acenaphthene	<0.008 mg/kg	TM218		0.0252 M	0.0174 M	0.0245 M	0.0167 M	0.0244 M	<0.008 M
Fluorene	<0.01 mg/kg	TM218		0.0189 M	0.0206 M	0.0175 M	0.0222 M	0.514 M	0.0202 M
Phenanthrene	<0.015 mg/kg	TM218		0.254 M	0.287 M	0.178 M	0.331 M	6.01 M	0.266 M
Anthracene	<0.016 mg/kg	TM218		0.0657 M	0.102 M	0.0503 M	0.0949 M	3.77 M	0.0997 M
Fluoranthene	<0.017 mg/kg	TM218		0.64 M	0.828 M	0.581 M	0.844 M	8.2 M	0.828 M
Pyrene	<0.015 mg/kg	TM218		0.59 M	1.21 M	0.532 M	0.887 M	5.48 M	0.893 M
Benz(a)anthracene	<0.014 mg/kg	TM218		0.333 M	0.609 M	0.281 M	0.437 M	3.21 M	0.531 M
Chrysene	<0.01 mg/kg	TM218		0.424 M	0.723 M	0.384 M	0.517 M	3.09 M	0.59 M
Benzo(b)fluoranthene	<0.015 mg/kg	TM218		0.657 M	0.944 M	0.633 M	0.785 M	3.46 M	0.946 M
Benzo(k)fluoranthene	<0.014 mg/kg	TM218		0.191 M	0.331 M	0.205 M	0.226 M	1.15 M	0.283 M
Benzo(a)pyrene	<0.015 mg/kg	TM218		0.312 M	0.463 M	0.258 M	0.362 M	1.78 M	0.437 M
Indeno(1,2,3-cd)pyrene	<0.018 mg/kg	TM218		0.356 M	0.449 M	0.302 M	0.457 M	1.74 M	0.557 M
Dibenzo(a,h)anthracene	<0.023 mg/kg	TM218		0.0551 M	0.0823 M	0.0517 M	0.0746 M	0.301 M	0.0869 M
Benzo(g,h,i)perylene	<0.024 mg/kg	TM218		0.264 M	0.347 M	0.25 M	0.342 M	1.08 M	0.407 M
PAH, Total Detected USEPA 16	<0.118 mg/kg	TM218		4.26	6.5	3.79	5.48	40.3	6.05

Validated

CERTIFICATE OF ANALYSIS

SDG:	191012-76	**Client Reference:**		**Report Number:**	527515
Location:	Llanwern	**Order Number:**	LLA681	**Superseded Report:**	527504

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-3+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	W95-04	W96-01	W96-02	W96-03	W96-04	W96-05
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	10/10/2019	10/10/2019	10/10/2019	10/10/2019	10/10/2019	10/10/2019
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	12/10/2019	12/10/2019	12/10/2019	12/10/2019	12/10/2019	12/10/2019
			SDG Ref	191012-76	191012-76	191012-76	191012-76	191012-76	191012-76
			Lab Sample No.(s)	20928492	20928497	20928504	20928253	20928264	20928269
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		87.8	81.8	85.3	84.1	86.4	86.6
Acenaphthene-d10 % recovery**	%	TM218		84.7	79.6	90	89	83.8	84.2
Phenanthrene-d10 % recovery**	%	TM218		87.6	81.1	103	97.5	86.7	87.6
Chrysene-d12 % recovery**	%	TM218		89.8	80.1	111	104	88	88.9
Perylene-d12 % recovery**	%	TM218		89.9	78.1	108	97.4	88.6	89.4
Naphthalene	<0.009 mg/kg	TM218		0.0661 M	<0.045 M	0.0329 M	0.086 M	0.0624 M	0.0456 M
Acenaphthylene	<0.012 mg/kg	TM218		0.0602 M	<0.06 M	0.0536 M	0.133 M	0.111 M	0.0608 M
Acenaphthene	<0.008 mg/kg	TM218		0.0301 M	<0.04 M	<0.008 M	0.0149 M	0.0163 M	0.0101 M
Fluorene	<0.01 mg/kg	TM218		0.0429 M	<0.05 M	0.0157 M	0.034 M	0.0693 M	0.0183 M
Phenanthrene	<0.015 mg/kg	TM218		0.523 M	0.176 M	0.206 M	0.539 M	0.705 M	0.272 M
Anthracene	<0.016 mg/kg	TM218		0.196 M	<0.08 M	0.0619 M	0.175 M	0.219 M	0.0928 M
Fluoranthene	<0.017 mg/kg	TM218		1.21 M	0.477 M	0.658 M	1.63 M	1.44 M	1.08 M
Pyrene	<0.015 mg/kg	TM218		1.1 M	0.436 M	0.553 M	1.61 M	1.31 M	1 M
Benz(a)anthracene	<0.014 mg/kg	TM218		0.606 M	0.265 M	0.36 M	0.94 M	0.734 M	0.523 M
Chrysene	<0.01 mg/kg	TM218		0.708 M	0.243 M	0.332 M	0.832 M	0.771 M	0.616 M
Benzo(b)fluoranthene	<0.015 mg/kg	TM218		1.01 M	0.538 M	0.449 M	0.993 M	1.18 M	1.01 M
Benzo(k)fluoranthene	<0.014 mg/kg	TM218		0.293 M	0.165 M	0.164 M	0.377 M	0.359 M	0.274 M
Benzo(a)pyrene	<0.015 mg/kg	TM218		0.476 M	0.249 M	0.335 M	0.705 M	0.544 M	0.439 M
Indeno(1,2,3-cd)pyrene	<0.018 mg/kg	TM218		0.508 M	0.263 M	0.298 M	0.569 M	0.617 M	0.522 M
Dibenzo(a,h)anthracene	<0.023 mg/kg	TM218		0.0924 M	<0.115 M	0.0631 M	0.12 M	0.0998 M	0.0867 M
Benzo(g,h,i)perylene	<0.024 mg/kg	TM218		0.42 M	0.22 M	0.31 M	0.534 M	0.426 M	0.411 M
PAH, Total Detected USEPA 16	<0.118 mg/kg	TM218		7.34	3.03	3.89	9.29	8.66	6.46

Validated

CERTIFICATE OF ANALYSIS

SDG:	191012-76	**Client Reference:**		**Report Number:**	527515
Location:	Llanwern	**Order Number:**	LLA681	**Superseded Report:**	527504

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-3+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	W96-06	W97-01	W97-02	W97-03	W97-04	W97-05
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	10/10/2019	10/10/2019	10/10/2019	10/10/2019	10/10/2019	10/10/2019
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	12/10/2019	12/10/2019	12/10/2019	12/10/2019	12/10/2019	12/10/2019
			SDG Ref	191012-76	191012-76	191012-76	191012-76	191012-76	191012-76
			Lab Sample No.(s)	20928278	20928284	20928292	20928300	20928310	20928321
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		79.4	101	85.8	105	84.7	86.8
Acenaphthene-d10 % recovery**	%	TM218		76.9	97.2	84.2	97.7	85.4	84.6
Phenanthrene-d10 % recovery**	%	TM218		77.4	95	86.1	101	87.7	89.6
Chrysene-d12 % recovery**	%	TM218		75.2	87.5	84	87.5	87.5	90.3
Perylene-d12 % recovery**	%	TM218		70	87.2	78.3	83.3	87.2	90.1
Naphthalene	<0.009 mg/kg	TM218		0.0533 M	0.0261 #	0.0763 M	<0.045 M	0.0479 M	0.0194 M
Acenaphthylene	<0.012 mg/kg	TM218		<0.06 M	0.0149 #	<0.012 M	<0.06 M	0.0179 M	<0.012 M
Acenaphthene	<0.008 mg/kg	TM218		<0.04 M	<0.008 #	0.0161 M	<0.04 M	0.017 M	0.0165 M
Fluorene	<0.01 mg/kg	TM218		<0.05 M	<0.01 #	0.0193 M	<0.05 M	0.0167 M	<0.01 M
Phenanthrene	<0.015 mg/kg	TM218		0.29 M	0.363 #	0.277 M	0.276 M	0.252 M	0.186 M
Anthracene	<0.016 mg/kg	TM218		<0.08 M	0.0752 #	0.0508 M	<0.08 M	0.0531 M	0.0299 M
Fluoranthene	<0.017 mg/kg	TM218		0.785 M	0.986 #	0.4 M	0.445 M	0.553 M	0.594 M
Pyrene	<0.015 mg/kg	TM218		0.807 M	1.02 #	0.37 M	0.426 M	0.507 M	0.523 M
Benz(a)anthracene	<0.014 mg/kg	TM218		0.453 M	0.592 #	0.209 M	0.24 M	0.321 M	0.211 M
Chrysene	<0.01 mg/kg	TM218		0.553 M	0.816 #	0.266 M	0.315 M	0.382 M	0.438 M
Benzo(b)fluoranthene	<0.015 mg/kg	TM218		0.83 M	1.32 #	0.349 M	0.44 M	0.603 M	0.724 M
Benzo(k)fluoranthene	<0.014 mg/kg	TM218		0.244 M	0.37 #	0.101 M	0.146 M	0.183 M	0.203 M
Benzo(a)pyrene	<0.015 mg/kg	TM218		0.408 M	0.573 #	0.161 M	0.239 M	0.325 M	0.147 M
Indeno(1,2,3-cd)pyrene	<0.018 mg/kg	TM218		0.376 M	0.657 #	0.158 M	0.237 M	0.308 M	0.352 M
Dibenzo(a,h)anthracene	<0.023 mg/kg	TM218		<0.115 M	0.108 #	0.0309 M	<0.115 M	0.0528 M	0.0517 M
Benzo(g,h,i)perylene	<0.024 mg/kg	TM218		0.341 M	0.606 #	0.124 M	0.229 M	0.269 M	0.288 M
PAH, Total Detected USEPA 16	<0.118 mg/kg	TM218		5.14	7.53	2.61	2.99	3.91	3.78

Validated

CERTIFICATE OF ANALYSIS

SDG:	191012-76	**Client Reference:**		**Report Number:**	527515
Location:	Llanwern	**Order Number:**	LLA681	**Superseded Report:**	527504

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-3+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	W97-06	W98-01	W98-02	W98-03	W98-04	W99-01
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	10/10/2019	10/10/2019	10/10/2019	10/10/2019	10/10/2019	10/10/2019
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	12/10/2019	12/10/2019	12/10/2019	12/10/2019	12/10/2019	12/10/2019
			SDG Ref	191012-76	191012-76	191012-76	191012-76	191012-76	191012-76
			Lab Sample No.(s)	20928330	20928349	20928354	20928360	20928365	20928369
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		84.5	101	85.6	86.7	88.1	84.5
Acenaphthene-d10 % recovery**	%	TM218		87.7	96.6	88.7	83.5	88.6	83.4
Phenanthrene-d10 % recovery**	%	TM218		104	93	97.3	86.9	90.1	85.1
Chrysene-d12 % recovery**	%	TM218		106	85	93.7	88.5	97	80.6
Perylene-d12 % recovery**	%	TM218		97.8	81.3	82.9	86.4	85.7	70.5
Naphthalene	<0.009 mg/kg	TM218		0.066 M	<0.009 M	0.0336 M	0.0233 M	0.202 M	0.134 M
Acenaphthylene	<0.012 mg/kg	TM218		0.0327 M	<0.012 M	0.0554 M	<0.012 M	0.0641 M	0.0524 M
Acenaphthene	<0.008 mg/kg	TM218		0.0157 M	<0.008 M	0.0794 M	0.0297 M	0.0547 M	0.022 M
Fluorene	<0.01 mg/kg	TM218		0.023 M	<0.01 M	0.139 M	0.0211 M	0.0554 M	0.0438 M
Phenanthrene	<0.015 mg/kg	TM218		0.434 M	0.271 M	1.05 M	0.306 M	0.963 M	0.842 M
Anthracene	<0.016 mg/kg	TM218		0.0997 M	0.0837 M	0.28 M	0.0689 M	0.173 M	0.128 M
Fluoranthene	<0.017 mg/kg	TM218		0.912 M	0.504 M	1.94 M	0.737 M	1.92 M	1.11 M
Pyrene	<0.015 mg/kg	TM218		0.673 M	0.389 M	1.37 M	0.67 M	1.73 M	0.829 M
Benz(a)anthracene	<0.014 mg/kg	TM218		0.445 M	0.298 M	0.923 M	0.428 M	1.19 M	0.399 M
Chrysene	<0.01 mg/kg	TM218		0.395 M	0.319 M	0.746 M	0.473 M	1.28 M	0.452 M
Benzo(b)fluoranthene	<0.015 mg/kg	TM218		0.402 M	0.49 M	0.781 M	0.872 M	1.43 M	0.641 M
Benzo(k)fluoranthene	<0.014 mg/kg	TM218		0.157 M	0.15 M	0.3 M	0.239 M	0.682 M	0.206 M
Benzo(a)pyrene	<0.015 mg/kg	TM218		0.263 M	0.248 M	0.664 M	0.494 M	1.55 M	0.362 M
Indeno(1,2,3-cd)pyrene	<0.018 mg/kg	TM218		0.208 M	0.211 M	0.446 M	0.444 M	1.16 M	0.331 M
Dibenzo(a,h)anthracene	<0.023 mg/kg	TM218		0.0588 M	0.0367 M	0.106 M	0.0599 M	0.216 M	0.0528 M
Benzo(g,h,i)perylene	<0.024 mg/kg	TM218		0.206 M	0.175 M	0.431 M	0.406 M	1.16 M	0.254 M
PAH, Total Detected USEPA 16	<0.118 mg/kg	TM218		4.39	3.17	9.35	5.27	13.8	5.86

Validated

CERTIFICATE OF ANALYSIS

SDG:	191012-76	**Client Reference:**		**Report Number:**	527515
Location:	Llanwern	**Order Number:**	LLA681	**Superseded Report:**	527504

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-3+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	W99-02	W99-03	W99-04	W99-05	W100-01	W100-02
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	10/10/2019	10/10/2019	10/10/2019	10/10/2019	10/10/2019	10/10/2019
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	12/10/2019	12/10/2019	12/10/2019	12/10/2019	12/10/2019	12/10/2019
			SDG Ref	191012-76	191012-76	191012-76	191012-76	191012-76	191012-76
			Lab Sample No.(s)	20928373	20928378	20928385	20928390	20928394	20928405
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		87.1	87.6	96.9	83.8	84	85.7
Acenaphthene-d10 % recovery**	%	TM218		85.7	85.2	91.7	91.1	83.1	84.5
Phenanthrene-d10 % recovery**	%	TM218		87.5	89.3	93.2	106	84.1	86.5
Chrysene-d12 % recovery**	%	TM218		86.6	92.1	92.8	103	78.4	84.5
Perylene-d12 % recovery**	%	TM218		85.6	93.7	84.8	97	72.9	82.3
Naphthalene	<0.009 mg/kg	TM218		0.0158 M	0.087 M	<0.09 #	0.0321 #	0.0518 M	0.0852 M
Acenaphthylene	<0.012 mg/kg	TM218		<0.012 M	0.0478 M	<0.12 #	<0.012 #	0.0301 M	0.0571 M
Acenaphthene	<0.008 mg/kg	TM218		0.024 M	0.0661 M	<0.08 #	0.0663 #	0.0255 M	0.0262 M
Fluorene	<0.01 mg/kg	TM218		0.0159 M	0.039 M	<0.1 #	0.0235 #	0.0402 M	0.0545 M
Phenanthrene	<0.015 mg/kg	TM218		0.182 M	0.702 M	0.442 #	0.499 #	0.634 M	0.726 M
Anthracene	<0.016 mg/kg	TM218		0.0497 M	0.155 M	<0.16 #	0.117 #	0.123 M	0.143 M
Fluoranthene	<0.017 mg/kg	TM218		0.469 M	1.82 M	1.08 #	1.53 #	1.11 M	1.15 M
Pyrene	<0.015 mg/kg	TM218		0.439 M	1.74 M	0.999 #	1.61 #	0.933 M	0.882 M
Benz(a)anthracene	<0.014 mg/kg	TM218		0.282 M	1.1 M	0.477 #	1.08 #	0.507 M	0.504 M
Chrysene	<0.01 mg/kg	TM218		0.319 M	1.25 M	0.541 #	1.03 #	0.76 M	0.547 M
Benzo(b)fluoranthene	<0.015 mg/kg	TM218		0.551 M	2.28 M	0.569 #	1.59 #	1.35 M	0.826 M
Benzo(k)fluoranthene	<0.014 mg/kg	TM218		0.172 M	0.627 M	0.273 #	0.561 #	0.377 M	0.277 M
Benzo(a)pyrene	<0.015 mg/kg	TM218		0.327 M	1.24 M	0.554 #	1.47 #	0.523 M	0.498 M
Indeno(1,2,3-cd)pyrene	<0.018 mg/kg	TM218		0.292 M	1.31 M	0.473 #	1.12 #	0.585 M	0.445 M
Dibenzo(a,h)anthracene	<0.023 mg/kg	TM218		0.0403 M	0.194 M	<0.23 #	0.202 #	0.129 M	0.0703 M
Benzo(g,h,i)perylene	<0.024 mg/kg	TM218		0.258 M	1.13 M	0.554 #	1.21 #	0.636 M	0.348 M
PAH, Total Detected USEPA 16	<0.118 mg/kg	TM218		3.44	13.8	5.96	12.2	7.82	6.64

Validated

CERTIFICATE OF ANALYSIS

SDG:	191012-76	**Client Reference:**		**Report Number:**	527515
Location:	Llanwern	**Order Number:**	LLA681	**Superseded Report:**	527504

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-3+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	W100-03	W100-04	W101-01	W101-02	W101-03	W102-01
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	10/10/2019	10/10/2019	10/10/2019	10/10/2019	10/10/2019	11/10/2019
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	12/10/2019	12/10/2019	12/10/2019	12/10/2019	12/10/2019	12/10/2019
			SDG Ref	191012-76	191012-76	191012-76	191012-76	191012-76	191012-76
			Lab Sample No.(s)	20928412	20928417	20928421	20928430	20928436	20928440
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		85.1	86.2	102	80.9	83.4	89.3
Acenaphthene-d10 % recovery**	%	TM218		85.2	84.5	98.7	81.5	87.5	86.2
Phenanthrene-d10 % recovery**	%	TM218		88.2	87.3	95.1	79.8	100	87.8
Chrysene-d12 % recovery**	%	TM218		87.7	88.6	87	74.7	91.9	83.1
Perylene-d12 % recovery**	%	TM218		80.9	89.2	75.5	74.1	85.2	70.2
Naphthalene	<0.009 mg/kg	TM218		0.0556 M	0.0425 M	0.0273 M	<0.045 M	0.0426 M	0.0184 M
Acenaphthylene	<0.012 mg/kg	TM218		0.0446 M	0.0259 M	<0.012 M	<0.06 M	<0.012 M	<0.012 M
Acenaphthene	<0.008 mg/kg	TM218		0.0261 M	0.098 M	<0.008 M	<0.04 M	0.135 M	0.0179 M
Fluorene	<0.01 mg/kg	TM218		0.0553 M	0.0561 M	<0.01 M	<0.05 M	0.0609 M	<0.01 M
Phenanthrene	<0.015 mg/kg	TM218		0.497 M	0.7 M	0.144 M	0.166 M	0.961 M	0.162 M
Anthracene	<0.016 mg/kg	TM218		0.128 M	0.225 M	0.0322 M	<0.08 M	0.27 M	0.0283 M
Fluoranthene	<0.017 mg/kg	TM218		1.17 M	1.97 M	0.297 M	0.267 M	4.03 M	0.268 M
Pyrene	<0.015 mg/kg	TM218		1.03 M	1.93 M	0.265 M	0.26 M	4.31 M	0.254 M
Benz(a)anthracene	<0.014 mg/kg	TM218		0.539 M	1.29 M	0.15 M	0.16 M	3.63 M	0.113 M
Chrysene	<0.01 mg/kg	TM218		0.616 M	1.4 M	0.149 M	0.174 M	3.53 M	0.138 M
Benzo(b)fluoranthene	<0.015 mg/kg	TM218		0.915 M	2.61 M	0.302 M	0.237 M	4.74 M	0.162 M
Benzo(k)fluoranthene	<0.014 mg/kg	TM218		0.311 M	0.806 M	0.0703 M	0.0883 M	1.89 M	0.0524 M
Benzo(a)pyrene	<0.015 mg/kg	TM218		0.514 M	1.62 M	0.19 M	0.192 M	4.84 M	0.129 M
Indeno(1,2,3-cd)pyrene	<0.018 mg/kg	TM218		0.523 M	1.55 M	0.18 M	0.139 M	3.3 M	0.11 M
Dibenzo(a,h)anthracene	<0.023 mg/kg	TM218		0.075 M	0.18 M	0.0263 M	<0.115 M	0.712 M	<0.023 M
Benzo(g,h,i)perylene	<0.024 mg/kg	TM218		0.367 M	1.14 M	0.176 M	0.18 M	3.41 M	0.135 M
PAH, Total Detected USEPA 16	<0.118 mg/kg	TM218		6.86	15.6	2.01	1.86	35.9	1.59

Validated

CERTIFICATE OF ANALYSIS

SDG:	191012-76	**Client Reference:**		**Report Number:**	527515
Location:	Llanwern	**Order Number:**	LLA681	**Superseded Report:**	527504

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-3+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	W102-02	W102-03	W103-01	W103-02	W103-03
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	11/10/2019	11/10/2019	11/10/2019	11/10/2019	11/10/2019
			Sample Time	00:00	00:00	00:00	00:00	00:00
			Date Received	12/10/2019	12/10/2019	12/10/2019	12/10/2019	12/10/2019
			SDG Ref	191012-76	191012-76	191012-76	191012-76	191012-76
			Lab Sample No.(s)	20928444	20928449	20928454	20928464	20928469
			AGS Reference					
Naphthalene-d8 % recovery**	%	TM218		85.6	85.9	86.1	83.2	88.4
Acenaphthene-d10 % recovery**	%	TM218		85.3	86	84.6	81.9	84.1
Phenanthrene-d10 % recovery**	%	TM218		86.3	83.7	86.6	71.7	85.6
Chrysene-d12 % recovery**	%	TM218		84.7	76.5	82.6	58.1	81.2
Perylene-d12 % recovery**	%	TM218		80	71.7	74.7	40.3	73.2
Naphthalene	<0.009 mg/kg	TM218		<0.009 M	<0.009 M	0.0273 M	0.15 #	0.0298 M
Acenaphthylene	<0.012 mg/kg	TM218		<0.012 M	<0.012 M	<0.012 M	0.0914 #	<0.012 M
Acenaphthene	<0.008 mg/kg	TM218		0.00951 M	<0.008 M	0.0354 M	0.0145 #	<0.008 M
Fluorene	<0.01 mg/kg	TM218		<0.01 M	<0.01 M	<0.01 M	0.0963 #	<0.01 M
Phenanthrene	<0.015 mg/kg	TM218		0.106 M	0.0635 M	0.329 M	1.09 #	0.143 M
Anthracene	<0.016 mg/kg	TM218		0.0192 M	<0.016 M	0.0775 M	0.168 #	0.0218 M
Fluoranthene	<0.017 mg/kg	TM218		0.29 M	0.178 M	0.896 M	1.21 #	0.4 M
Pyrene	<0.015 mg/kg	TM218		0.292 M	0.188 M	0.803 M	0.844 #	0.369 M
Benz(a)anthracene	<0.014 mg/kg	TM218		0.187 M	0.116 M	0.473 M	0.515 #	0.188 M
Chrysene	<0.01 mg/kg	TM218		0.243 M	0.132 M	0.623 M	0.486 #	0.281 M
Benzo(b)fluoranthene	<0.015 mg/kg	TM218		0.45 M	0.174 M	1.02 M	0.515 #	0.465 M
Benzo(k)fluoranthene	<0.014 mg/kg	TM218		0.121 M	0.0603 M	0.338 M	0.173 #	0.128 M
Benzo(a)pyrene	<0.015 mg/kg	TM218		0.224 M	0.128 M	0.522 M	0.42 #	0.191 M
Indeno(1,2,3-cd)pyrene	<0.018 mg/kg	TM218		0.256 M	0.0978 M	0.579 M	0.311 #	0.227 M
Dibenzo(a,h)anthracene	<0.023 mg/kg	TM218		0.0389 M	<0.023 M	0.0809 M	0.0605 #	0.0331 M
Benzo(g,h,i)perylene	<0.024 mg/kg	TM218		0.22 M	0.118 M	0.453 M	0.329 #	0.22 M
PAH, Total Detected USEPA 16	<0.118 mg/kg	TM218		2.46	1.26	6.26	6.48	2.7

Validated

CERTIFICATE OF ANALYSIS

SDG:	191012-76	**Client Reference:**		**Report Number:**	527515
Location:	Llanwern	**Order Number:**	LLA681	**Superseded Report:**	527504

TPH CWG (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-3+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	W94-01	W94-02	W94-03	W95-01	W95-02	W95-03
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	10/10/2019	10/10/2019	10/10/2019	10/10/2019	10/10/2019	10/10/2019
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	12/10/2019	12/10/2019	12/10/2019	12/10/2019	12/10/2019	12/10/2019
			SDG Ref	191012-76	191012-76	191012-76	191012-76	191012-76	191012-76
			Lab Sample No.(s)	20928248	20928340	20928399	20928458	20928475	20928484
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		92.4	91	102	78.9 ♦	97.2	101
Aliphatics >C5-C6	<0.01 mg/kg	TM089		<0.02	<0.02	<0.02	<0.02 ♦	<0.02	<0.02
Aliphatics >C6-C8	<0.01 mg/kg	TM089		<0.02	<0.02	<0.02	<0.02 ♦	<0.02	<0.02
Aliphatics >C8-C10	<0.01 mg/kg	TM089		<0.02	<0.02	<0.02	<0.02 ♦	<0.02	<0.02
Aliphatics >C10-C12	<1 mg/kg	TM414		<1	<1	<1	<1	<1	<1
Aliphatics >C12-C16	<1 mg/kg	TM414		3.68	2.37	17.8	6.21	10.9	11
Aliphatics >C16-C21	<1 mg/kg	TM414		23.3	19.1	72.5	30.8	36.3	42.5
Aliphatics >C21-C35	<1 mg/kg	TM414		139	108	242	125	128	135
Aliphatics >C35-C44	<1 mg/kg	TM414		38.9	65.5	41.4	35	44.4	33.3
Total Aliphatics >C10-C44	<5 mg/kg	TM414		205	195	374	197	220	221
Total Aliphatics & Aromatics >C10-C44	<10 mg/kg	TM414		238	260	422	243	262	250
Aromatics >EC5-EC7	<0.01 mg/kg	TM089		<0.02	<0.02	<0.02	<0.02 ♦	<0.02	<0.02
Aromatics >EC7-EC8	<0.01 mg/kg	TM089		<0.02	<0.02	<0.02	<0.02 ♦	<0.02	<0.02
Aromatics >EC8-EC10	<0.01 mg/kg	TM089		<0.02	<0.02	<0.02	<0.02 ♦	<0.02	<0.02
Aromatics > EC10-EC12	<1 mg/kg	TM414		<1	<1	<1	<1	<1	<1
Aromatics > EC12-EC16	<1 mg/kg	TM414		<1	<1	3.13	<1	1.64	1.17
Aromatics > EC16-EC21	<1 mg/kg	TM414		2.63	5.91	7.91	4.91	6.11	4.76
Aromatics > EC21-EC35	<1 mg/kg	TM414		28.4	56.2	35.2	37.5	33.3	21.9
Aromatics >EC35-EC44	<1 mg/kg	TM414		1.56	1.8	1.21	2.23	1.05	<1
Aromatics > EC40-EC44	<1 mg/kg	TM414		<1	<1	<1	<1	<1	<1
Total Aromatics > EC10-EC44	<5 mg/kg	TM414		33.1	64.8	47.5	45.6	42.1	29
Total Aliphatics & Aromatics >C5-C44	<10 mg/kg	TM414		238	260	422	243	262	250
Total Aliphatics >C5-C10	<0.05 mg/kg	TM089		<0.05	<0.05	<0.05	<0.05 ♦	<0.05	<0.05
Total Aromatics >EC5-EC10	<0.05 mg/kg	TM089		<0.05	<0.05	<0.05	<0.05 ♦	<0.05	<0.05
GRO >C5-C10	<0.02 mg/kg	TM089		<0.02	<0.02	<0.02	<0.02 ♦	<0.02	<0.02

Validated

CERTIFICATE OF ANALYSIS

SDG:	191012-76	**Client Reference:**		**Report Number:**	527515
Location:	Llanwern	**Order Number:**	LLA681	**Superseded Report:**	527504

TPH CWG (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-3+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	W95-04	W96-01	W96-02	W96-03	W96-04	W96-05
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	10/10/2019	10/10/2019	10/10/2019	10/10/2019	10/10/2019	10/10/2019
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	12/10/2019	12/10/2019	12/10/2019	12/10/2019	12/10/2019	12/10/2019
			SDG Ref	191012-76	191012-76	191012-76	191012-76	191012-76	191012-76
			Lab Sample No.(s)	20928492	20928497	20928504	20928253	20928264	20928269
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		94.5 ♦	92.8	94	90.9	100	94
Aliphatics >C5-C6	<0.01 mg/kg	TM089		<0.02 ♦	<0.02	<0.02	<0.02	<0.02	<0.02
Aliphatics >C6-C8	<0.01 mg/kg	TM089		<0.02 ♦	<0.02	<0.02	<0.02	<0.02	<0.02
Aliphatics >C8-C10	<0.01 mg/kg	TM089		<0.02 ♦	<0.02	<0.02	<0.02	<0.02	<0.02
Aliphatics >C10-C12	<1 mg/kg	TM414		<1	<1	<1	<1	<1	<1
Aliphatics >C12-C16	<1 mg/kg	TM414		7.12	7.41	4.91	7.82	9.36	24.2
Aliphatics >C16-C21	<1 mg/kg	TM414		26.3	25.9	22.6	28.4	33	62.9
Aliphatics >C21-C35	<1 mg/kg	TM414		87.1	107	92.2	111	140	103
Aliphatics >C35-C44	<1 mg/kg	TM414		33	82.4	40.5	44.5	45	37.4
Total Aliphatics >C10-C44	<5 mg/kg	TM414		154	223	160	192	227	228
Total Aliphatics & Aromatics >C10-C44	<10 mg/kg	TM414		186	274	197	238	261	260
Aromatics >EC5-EC7	<0.01 mg/kg	TM089		<0.02 ♦	<0.02	<0.02	<0.02	<0.02	<0.02
Aromatics >EC7-EC8	<0.01 mg/kg	TM089		<0.02 ♦	<0.02	<0.02	<0.02	<0.02	<0.02
Aromatics >EC8-EC10	<0.01 mg/kg	TM089		<0.02 ♦	<0.02	<0.02	<0.02	<0.02	<0.02
Aromatics > EC10-EC12	<1 mg/kg	TM414		<1	<1	<1	<1	<1	<1
Aromatics > EC12-EC16	<1 mg/kg	TM414		<1	1.02	<1	1.92	<1	1.7
Aromatics > EC16-EC21	<1 mg/kg	TM414		3.91	5.07	2.51	7.98	5.25	6.19
Aromatics > EC21-EC35	<1 mg/kg	TM414		26	41.7	32.8	35	26.6	23.1
Aromatics >EC35-EC44	<1 mg/kg	TM414		1.08	2.9	1.02	1.05	<1	<1
Aromatics > EC40-EC44	<1 mg/kg	TM414		<1	<1	<1	<1	<1	<1
Total Aromatics > EC10-EC44	<5 mg/kg	TM414		32	50.7	36.9	46.1	33.8	32.2
Total Aliphatics & Aromatics >C5-C44	<10 mg/kg	TM414		186	274	197	238	261	260
Total Aliphatics >C5-C10	<0.05 mg/kg	TM089		<0.05 ♦	<0.05	<0.05	<0.05	<0.05	<0.05
Total Aromatics >EC5-EC10	<0.05 mg/kg	TM089		<0.05 ♦	<0.05	<0.05	<0.05	<0.05	<0.05
GRO >C5-C10	<0.02 mg/kg	TM089		<0.02 ♦	<0.02	<0.02	<0.02	<0.02	<0.02

CERTIFICATE OF ANALYSIS

SDG:	191012-76	**Client Reference:**		**Report Number:**	527515
Location:	Llanwern	**Order Number:**	LLA681	**Superseded Report:**	527504

TPH CWG (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-3+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	W96-06	W97-01	W97-02	W97-03	W97-04	W97-05
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	10/10/2019	10/10/2019	10/10/2019	10/10/2019	10/10/2019	10/10/2019
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	12/10/2019	12/10/2019	12/10/2019	12/10/2019	12/10/2019	12/10/2019
			SDG Ref	191012-76	191012-76	191012-76	191012-76	191012-76	191012-76
			Lab Sample No.(s)	20928278	20928284	20928292	20928300	20928310	20928321
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		86.8	96.8	90	87	89	94.5
Aliphatics >C5-C6	<0.01 mg/kg	TM089		<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Aliphatics >C6-C8	<0.01 mg/kg	TM089		<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Aliphatics >C8-C10	<0.01 mg/kg	TM089		<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Aliphatics >C10-C12	<1 mg/kg	TM414		<1	<1	<1	<1	<1	<1
Aliphatics >C12-C16	<1 mg/kg	TM414		7.56	15.7	<1	5.05	1.79	165
Aliphatics >C16-C21	<1 mg/kg	TM414		34	44.9	2.13	19.3	7.24	400
Aliphatics >C21-C35	<1 mg/kg	TM414		151	273	13.3	96	34.7	305
Aliphatics >C35-C44	<1 mg/kg	TM414		75.1	84.9	3.09	39.3	12.8	58.7
Total Aliphatics >C10-C44	<5 mg/kg	TM414		268	418	19.7	160	56.5	929
Total Aliphatics & Aromatics >C10-C44	<10 mg/kg	TM414		355	444	31.3	192	71.3	1010
Aromatics >EC5-EC7	<0.01 mg/kg	TM089		<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Aromatics >EC7-EC8	<0.01 mg/kg	TM089		<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Aromatics >EC8-EC10	<0.01 mg/kg	TM089		<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Aromatics > EC10-EC12	<1 mg/kg	TM414		<1	<1	<1	<1	<1	<1
Aromatics > EC12-EC16	<1 mg/kg	TM414		3.35	1.43	1.92	<1	<1	26.9
Aromatics > EC16-EC21	<1 mg/kg	TM414		9.46	2.11	1.86	1.6	<1	26.3
Aromatics > EC21-EC35	<1 mg/kg	TM414		73.5	20.3	6.74	28.6	12.3	30.1
Aromatics >EC35-EC44	<1 mg/kg	TM414		1.31	1.42	<1	1.23	1.14	<1
Aromatics > EC40-EC44	<1 mg/kg	TM414		<1	<1	<1	<1	<1	<1
Total Aromatics > EC10-EC44	<5 mg/kg	TM414		87.7	25.2	11.6	32.2	14.8	84.4
Total Aliphatics & Aromatics >C5-C44	<10 mg/kg	TM414		355	444	31.3	192	71.3	1010
Total Aliphatics >C5-C10	<0.05 mg/kg	TM089		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Total Aromatics >EC5-EC10	<0.05 mg/kg	TM089		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
GRO >C5-C10	<0.02 mg/kg	TM089		<0.02	<0.02	<0.02	<0.02	<0.02	<0.02

Validated

CERTIFICATE OF ANALYSIS

SDG:	191012-76	**Client Reference:**		**Report Number:**	527515
Location:	Llanwern	**Order Number:**	LLA681	**Superseded Report:**	527504

TPH CWG (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-3+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	W97-06	W98-01	W98-02	W98-03	W98-04	W99-01
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	10/10/2019	10/10/2019	10/10/2019	10/10/2019	10/10/2019	10/10/2019
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	12/10/2019	12/10/2019	12/10/2019	12/10/2019	12/10/2019	12/10/2019
			SDG Ref	191012-76	191012-76	191012-76	191012-76	191012-76	191012-76
			Lab Sample No.(s)	20928330	20928349	20928354	20928360	20928365	20928369
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		94	88	85	88	110	117
Aliphatics >C5-C6	<0.01 mg/kg	TM089		<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Aliphatics >C6-C8	<0.01 mg/kg	TM089		<0.02	<0.02	<0.02	<0.02	0.0234	0.041
Aliphatics >C8-C10	<0.01 mg/kg	TM089		<0.02	<0.02	<0.02	<0.02	0.0281	0.0538
Aliphatics >C10-C12	<1 mg/kg	TM414		<1	<1	<1	<1	<1	<1
Aliphatics >C12-C16	<1 mg/kg	TM414		1.27	<1	<1	<1	14.1	<1
Aliphatics >C16-C21	<1 mg/kg	TM414		3.39	3.21	2.09	3.75	34.5	<1
Aliphatics >C21-C35	<1 mg/kg	TM414		13.2	12.8	14.8	50.7	87.1	<1
Aliphatics >C35-C44	<1 mg/kg	TM414		2.69	2.32	2.69	10.1	24.4	<1
Total Aliphatics >C10-C44	<5 mg/kg	TM414		20.6	18.9	20	65.3	160	<5
Total Aliphatics & Aromatics >C10-C44	<10 mg/kg	TM414		31	33.4	34.5	95	305	<10
Aromatics >EC5-EC7	<0.01 mg/kg	TM089		<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Aromatics >EC7-EC8	<0.01 mg/kg	TM089		<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Aromatics >EC8-EC10	<0.01 mg/kg	TM089		<0.02	<0.02	<0.02	<0.02	<0.02	0.0363
Aromatics > EC10-EC12	<1 mg/kg	TM414		<1	<1	<1	<1	<1	<1
Aromatics > EC12-EC16	<1 mg/kg	TM414		1.76	<1	<1	<1	5.73	<1
Aromatics > EC16-EC21	<1 mg/kg	TM414		3.31	1.69	2.18	2.32	28	<1
Aromatics > EC21-EC35	<1 mg/kg	TM414		4.28	11.8	11.1	25.7	100	<1
Aromatics >EC35-EC44	<1 mg/kg	TM414		<1	<1	<1	1.28	9.78	<1
Aromatics > EC40-EC44	<1 mg/kg	TM414		<1	<1	<1	<1	<1	<1
Total Aromatics > EC10-EC44	<5 mg/kg	TM414		10.4	14.4	14.5	29.7	144	<5
Total Aliphatics & Aromatics >C5-C44	<10 mg/kg	TM414		31	33.4	34.5	95	305	<10
Total Aliphatics >C5-C10	<0.05 mg/kg	TM089		<0.05	<0.05	<0.05	<0.05	0.0515	0.0948
Total Aromatics >EC5-EC10	<0.05 mg/kg	TM089		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
GRO >C5-C10	<0.02 mg/kg	TM089		<0.02	<0.02	<0.02	<0.02	0.0515	0.0948

Validated

CERTIFICATE OF ANALYSIS

SDG:	191012-76	**Client Reference:**		**Report Number:**	527515
Location:	Llanwern	**Order Number:**	LLA681	**Superseded Report:**	527504

TPH CWG (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-3+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	W99-02	W99-03	W99-04	W99-05	W100-01	W100-02
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	10/10/2019	10/10/2019	10/10/2019	10/10/2019	10/10/2019	10/10/2019
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	12/10/2019	12/10/2019	12/10/2019	12/10/2019	12/10/2019	12/10/2019
			SDG Ref	191012-76	191012-76	191012-76	191012-76	191012-76	191012-76
			Lab Sample No.(s)	20928373	20928378	20928385	20928390	20928394	20928405
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		97	89.7	96	98.4	99	103
Aliphatics >C5-C6	<0.01 mg/kg	TM089		<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Aliphatics >C6-C8	<0.01 mg/kg	TM089		<0.02	0.0269	<0.02	<0.02	<0.02	<0.02
Aliphatics >C8-C10	<0.01 mg/kg	TM089		<0.02	0.0258	<0.02	<0.02	0.0948	<0.02
Aliphatics >C10-C12	<1 mg/kg	TM414		<1	<1	<1	<1	4.25	<1
Aliphatics >C12-C16	<1 mg/kg	TM414		<1	4.73	10.4	<1	25.1	6.17
Aliphatics >C16-C21	<1 mg/kg	TM414		<1	16.2	31.2	6.64	34.7	19.6
Aliphatics >C21-C35	<1 mg/kg	TM414		1.62	115	100	16.1	51.6	33.4
Aliphatics >C35-C44	<1 mg/kg	TM414		<1	29.5	21.3	2.78	7.43	6.06
Total Aliphatics >C10-C44	<5 mg/kg	TM414		<5	165	163	26.4	123	65.3
Total Aliphatics & Aromatics >C10-C44	<10 mg/kg	TM414		27.4	222	226	75.4	176	116
Aromatics >EC5-EC7	<0.01 mg/kg	TM089		<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Aromatics >EC7-EC8	<0.01 mg/kg	TM089		<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Aromatics >EC8-EC10	<0.01 mg/kg	TM089		<0.02	<0.02	<0.02	<0.02	0.0632	<0.02
Aromatics > EC10-EC12	<1 mg/kg	TM414		<1	<1	<1	<1	<1	<1
Aromatics > EC12-EC16	<1 mg/kg	TM414		<1	<1	2.58	<1	11.4	2.48
Aromatics > EC16-EC21	<1 mg/kg	TM414		2.68	6.28	8.47	6.4	13.1	10.3
Aromatics > EC21-EC35	<1 mg/kg	TM414		18.7	48.1	50.2	40.8	26.6	34.4
Aromatics >EC35-EC44	<1 mg/kg	TM414		1.25	1.88	1.76	1.76	<1	3.02
Aromatics > EC40-EC44	<1 mg/kg	TM414		<1	<1	<1	<1	<1	<1
Total Aromatics > EC10-EC44	<5 mg/kg	TM414		23.5	57.2	63	49	53.1	50.4
Total Aliphatics & Aromatics >C5-C44	<10 mg/kg	TM414		23.5	222	226	75.4	176	116
Total Aliphatics >C5-C10	<0.05 mg/kg	TM089		<0.05	0.0526	<0.05	<0.05	0.0948	<0.05
Total Aromatics >EC5-EC10	<0.05 mg/kg	TM089		<0.05	<0.05	<0.05	<0.05	0.0632	<0.05
GRO >C5-C10	<0.02 mg/kg	TM089		<0.02	0.0526	<0.02	<0.02	0.158	<0.02

CERTIFICATE OF ANALYSIS

SDG:	191012-76	**Client Reference:**		**Report Number:**	527515
Location:	Llanwern	**Order Number:**	LLA681	**Superseded Report:**	527504

TPH CWG (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-3+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	W100-03	W100-04	W101-01	W101-02	W101-03	W102-01
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	10/10/2019	10/10/2019	10/10/2019	10/10/2019	10/10/2019	11/10/2019
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	12/10/2019	12/10/2019	12/10/2019	12/10/2019	12/10/2019	12/10/2019
			SDG Ref	191012-76	191012-76	191012-76	191012-76	191012-76	191012-76
			Lab Sample No.(s)	20928412	20928417	20928421	20928430	20928436	20928440
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		101	104	95.8	93	104	102
Aliphatics >C5-C6	<0.01 mg/kg	TM089		<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Aliphatics >C6-C8	<0.01 mg/kg	TM089		0.0403	<0.02	0.049	<0.02	<0.02	0.0239
Aliphatics >C8-C10	<0.01 mg/kg	TM089		0.0459	<0.02	0.0502	<0.02	<0.02	0.0239
Aliphatics >C10-C12	<1 mg/kg	TM414		6.18	<1	3.33	<1	<1	<1
Aliphatics >C12-C16	<1 mg/kg	TM414		123	1.36	72.2	6.48	4.78	9.92
Aliphatics >C16-C21	<1 mg/kg	TM414		219	6.94	111	23.5	20.2	19
Aliphatics >C21-C35	<1 mg/kg	TM414		157	40	51.8	69.6	175	27.5
Aliphatics >C35-C44	<1 mg/kg	TM414		23.7	6.9	4.61	20.5	41.9	5.49
Total Aliphatics >C10-C44	<5 mg/kg	TM414		529	55.2	243	120	242	62.1
Total Aliphatics & Aromatics >C10-C44	<10 mg/kg	TM414		651	119	276	139	509	78.1
Aromatics >EC5-EC7	<0.01 mg/kg	TM089		<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Aromatics >EC7-EC8	<0.01 mg/kg	TM089		<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Aromatics >EC8-EC10	<0.01 mg/kg	TM089		0.0302	<0.02	0.0342	<0.02	<0.02	<0.02
Aromatics > EC10-EC12	<1 mg/kg	TM414		<1	<1	<1	<1	<1	<1
Aromatics > EC12-EC16	<1 mg/kg	TM414		41.2	<1	10.7	<1	2.43	<1
Aromatics > EC16-EC21	<1 mg/kg	TM414		43.9	6.9	12.4	1.44	21.2	1.36
Aromatics > EC21-EC35	<1 mg/kg	TM414		33.9	54.1	9.67	14.9	211	12.8
Aromatics >EC35-EC44	<1 mg/kg	TM414		1.49	2.61	<1	<1	32.1	<1
Aromatics > EC40-EC44	<1 mg/kg	TM414		<1	<1	<1	<1	2.82	<1
Total Aromatics > EC10-EC44	<5 mg/kg	TM414		121	63.8	33.8	18.2	267	15.9
Total Aliphatics & Aromatics >C5-C44	<10 mg/kg	TM414		651	119	276	139	509	78.1
Total Aliphatics >C5-C10	<0.05 mg/kg	TM089		0.0862	<0.05	0.0992	<0.05	<0.05	<0.05
Total Aromatics >EC5-EC10	<0.05 mg/kg	TM089		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
GRO >C5-C10	<0.02 mg/kg	TM089		0.0862	<0.02	0.0992	<0.02	<0.02	<0.02

Validated

CERTIFICATE OF ANALYSIS

SDG:	191012-76	**Client Reference:**		**Report Number:**	527515
Location:	Llanwern	**Order Number:**	LLA681	**Superseded Report:**	527504

TPH CWG (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-3+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	W102-02	W102-03	W103-01	W103-02	W103-03
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	11/10/2019	11/10/2019	11/10/2019	11/10/2019	11/10/2019
			Sample Time	00:00	00:00	00:00	00:00	00:00
			Date Received	12/10/2019	12/10/2019	12/10/2019	12/10/2019	12/10/2019
			SDG Ref	191012-76	191012-76	191012-76	191012-76	191012-76
			Lab Sample No.(s)	20928444	20928449	20928454	20928464	20928469
			AGS Reference					
GRO Surrogate % recovery**	%	TM089		101	94	101	117	101
Aliphatics >C5-C6	<0.01 mg/kg	TM089		<0.02	<0.02	<0.02	<0.02	<0.02
Aliphatics >C6-C8	<0.01 mg/kg	TM089		<0.02	<0.02	<0.02	0.0442	<0.02
Aliphatics >C8-C10	<0.01 mg/kg	TM089		<0.02	<0.02	0.0322	0.0923	<0.02
Aliphatics >C10-C12	<1 mg/kg	TM414		<1	<1	<1	<1	<1
Aliphatics >C12-C16	<1 mg/kg	TM414		2.34	9.03	21	21.4	8.82
Aliphatics >C16-C21	<1 mg/kg	TM414		6.98	17.8	48.7	43.7	24.3
Aliphatics >C21-C35	<1 mg/kg	TM414		11.6	15.1	84.6	48.2	33.4
Aliphatics >C35-C44	<1 mg/kg	TM414		1.19	1.94	18.4	6.3	9.27
Total Aliphatics >C10-C44	<5 mg/kg	TM414		22.1	44	173	120	75.9
Total Aliphatics & Aromatics >C10-C44	<10 mg/kg	TM414		29.3	50.8	207	140	86.1
Aromatics >EC5-EC7	<0.01 mg/kg	TM089		<0.02	<0.02	<0.02	<0.02	<0.02
Aromatics >EC7-EC8	<0.01 mg/kg	TM089		<0.02	<0.02	<0.02	<0.02	<0.02
Aromatics >EC8-EC10	<0.01 mg/kg	TM089		<0.02	<0.02	0.0219	0.0611	<0.02
Aromatics > EC10-EC12	<1 mg/kg	TM414		<1	<1	<1	<1	<1
Aromatics > EC12-EC16	<1 mg/kg	TM414		<1	<1	3.64	4.43	<1
Aromatics > EC16-EC21	<1 mg/kg	TM414		<1	1.79	7.08	5.78	2.07
Aromatics > EC21-EC35	<1 mg/kg	TM414		5.2	3.42	21.5	8.8	6.36
Aromatics >EC35-EC44	<1 mg/kg	TM414		<1	<1	<1	<1	<1
Aromatics > EC40-EC44	<1 mg/kg	TM414		<1	<1	<1	<1	<1
Total Aromatics > EC10-EC44	<5 mg/kg	TM414		7.2	6.77	33.6	20.1	10.2
Total Aliphatics & Aromatics >C5-C44	<10 mg/kg	TM414		29.3	50.8	207	140	86.1
Total Aliphatics >C5-C10	<0.05 mg/kg	TM089		<0.05	<0.05	<0.05	0.137	<0.05
Total Aromatics >EC5-EC10	<0.05 mg/kg	TM089		<0.05	<0.05	<0.05	0.0611	<0.05
GRO >C5-C10	<0.02 mg/kg	TM089		<0.02	<0.02	<0.02	0.198	<0.02

Validated

CERTIFICATE OF ANALYSIS

SDG:	191012-76	**Client Reference:**		**Report Number:**	527515
Location:	Llanwern	**Order Number:**	LLA681	**Superseded Report:**	527504

VOC MS (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-3+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	W94-01	W94-02	W94-03	W95-01	W95-02	W95-03
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	10/10/2019	10/10/2019	10/10/2019	10/10/2019	10/10/2019	10/10/2019
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	12/10/2019	12/10/2019	12/10/2019	12/10/2019	12/10/2019	12/10/2019
			SDG Ref	191012-76	191012-76	191012-76	191012-76	191012-76	191012-76
			Lab Sample No.(s)	20928248	20928340	20928399	20928458	20928475	20928484
			AGS Reference						
Dibromofluoromethane**	%	TM116		114	113	112	116	113	107
Toluene-d8**	%	TM116		95	96.2	97	97.7	96.2	96.3
4-Bromofluorobenzene**	%	TM116		94.3	94.6	100	94	94.6	97.3
Methyl Tertiary Butyl Ether	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M
Benzene	<0.009 mg/kg	TM116		<0.09 M	<0.09 M	<0.09 M	<0.09 M	<0.09 M	<0.09 M
Toluene	<0.007 mg/kg	TM116		<0.07 M	<0.07 M	<0.07 M	<0.07 M	<0.07 M	<0.07 M
Ethylbenzene	<0.004 mg/kg	TM116		<0.04 M	<0.04 M	<0.04 M	<0.04 M	<0.04 M	<0.04 M
p/m-Xylene	<0.01 mg/kg	TM116		<0.1 #	<0.1 #	<0.1 #	<0.1 #	<0.1 #	<0.1 #
o-Xylene	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M
Naphthalene	<0.013 mg/kg	TM116		<0.13 M	<0.13 M	<0.13 M	<0.13 M	<0.13 M	<0.13 M
Sum of BTEX	<0.04 mg/kg	TM116		<0.4	<0.4	<0.4	<0.4	<0.4	<0.4

Validated

CERTIFICATE OF ANALYSIS

SDG:	191012-76	**Client Reference:**		**Report Number:**	527515
Location:	Llanwern	**Order Number:**	LLA681	**Superseded Report:**	527504

VOC MS (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-3+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	W95-04	W96-01	W96-02	W96-03	W96-04	W96-05
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	10/10/2019	10/10/2019	10/10/2019	10/10/2019	10/10/2019	10/10/2019
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	12/10/2019	12/10/2019	12/10/2019	12/10/2019	12/10/2019	12/10/2019
			SDG Ref	191012-76	191012-76	191012-76	191012-76	191012-76	191012-76
			Lab Sample No.(s)	20928492	20928497	20928504	20928253	20928264	20928269
			AGS Reference						
Dibromofluoromethane**	%	TM116		109	117	112	111	114	112
Toluene-d8**	%	TM116		97.4	94.8	97.3	96.8	96.4	95.8
4-Bromofluorobenzene**	%	TM116		95.1	97.7	94.1	93.6	94.4	87.6
Methyl Tertiary Butyl Ether	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M
Benzene	<0.009 mg/kg	TM116		<0.09 M	<0.09 M	<0.09 M	<0.09 M	<0.09 M	<0.09 M
Toluene	<0.007 mg/kg	TM116		<0.07 M	<0.07 M	<0.07 M	<0.07 M	<0.07 M	<0.07 M
Ethylbenzene	<0.004 mg/kg	TM116		<0.04 M	<0.04 M	<0.04 M	<0.04 M	<0.04 M	<0.04 M
p/m-Xylene	<0.01 mg/kg	TM116		<0.1 #	<0.1 #	<0.1 #	<0.1 #	<0.1 #	<0.1 #
o-Xylene	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M
Naphthalene	<0.013 mg/kg	TM116		<0.13 M	<0.13 M	<0.13 M	<0.13 M	<0.13 M	<0.13 M
Sum of BTEX	<0.04 mg/kg	TM116		<0.4	<0.4	<0.4	<0.4	<0.4	<0.4

Validated

CERTIFICATE OF ANALYSIS

SDG:	191012-76	**Client Reference:**		**Report Number:**	527515
Location:	Llanwern	**Order Number:**	LLA681	**Superseded Report:**	527504

VOC MS (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-3+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	W96-06	W97-01	W97-02	W97-03	W97-04	W97-05
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	10/10/2019	10/10/2019	10/10/2019	10/10/2019	10/10/2019	10/10/2019
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	12/10/2019	12/10/2019	12/10/2019	12/10/2019	12/10/2019	12/10/2019
			SDG Ref	191012-76	191012-76	191012-76	191012-76	191012-76	191012-76
			Lab Sample No.(s)	20928278	20928284	20928292	20928300	20928310	20928321
			AGS Reference						
Dibromofluoromethane**	%	TM116		114	114	113	108	107	111
Toluene-d8**	%	TM116		95.5	95.6	96.8	98.5	96.7	95.9
4-Bromofluorobenzene**	%	TM116		92.2	95	89.3	91.7	91.5	93.1
Methyl Tertiary Butyl Ether	<0.01 mg/kg	TM116		<0.1 M	<0.1 #	<0.1 M	<0.1 M	<0.1 M	<0.1 M
Benzene	<0.009 mg/kg	TM116		<0.09 M	<0.09 #	<0.09 M	<0.09 M	<0.09 M	<0.09 M
Toluene	<0.007 mg/kg	TM116		<0.07 M	<0.07 #	<0.07 M	<0.07 M	<0.07 M	<0.07 M
Ethylbenzene	<0.004 mg/kg	TM116		<0.04 M	<0.04 #	<0.04 M	<0.04 M	<0.04 M	<0.04 M
p/m-Xylene	<0.01 mg/kg	TM116		<0.1 #	<0.1 #	<0.1 #	<0.1 #	<0.1 #	<0.1 #
o-Xylene	<0.01 mg/kg	TM116		<0.1 M	<0.1 #	<0.1 M	<0.1 M	<0.1 M	<0.1 M
Naphthalene	<0.013 mg/kg	TM116		<0.13 M	<0.13 #	<0.13 M	<0.13 M	<0.13 M	<0.13 M
Sum of BTEX	<0.04 mg/kg	TM116		<0.4	<0.4	<0.4	<0.4	<0.4	<0.4

Validated

CERTIFICATE OF ANALYSIS

SDG:	191012-76	**Client Reference:**		**Report Number:**	527515
Location:	Llanwern	**Order Number:**	LLA681	**Superseded Report:**	527504

VOC MS (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-3+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	W97-06	W98-01	W98-02	W98-03	W98-04	W99-01
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	10/10/2019	10/10/2019	10/10/2019	10/10/2019	10/10/2019	10/10/2019
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	12/10/2019	12/10/2019	12/10/2019	12/10/2019	12/10/2019	12/10/2019
			SDG Ref	191012-76	191012-76	191012-76	191012-76	191012-76	191012-76
			Lab Sample No.(s)	20928330	20928349	20928354	20928360	20928365	20928369
			AGS Reference						
Dibromofluoromethane**	%	TM116		110	107	111	106	101	97.2
Toluene-d8**	%	TM116		98.3	98.8	96.7	96.3	99.3	99.7
4-Bromofluorobenzene**	%	TM116		92.2	89.8	90	91.5	92.5	91.9
Methyl Tertiary Butyl Ether	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M
Benzene	<0.009 mg/kg	TM116		<0.09 M	<0.09 M	<0.09 M	<0.09 M	<0.09 M	<0.09 M
Toluene	<0.007 mg/kg	TM116		<0.07 M	<0.07 M	<0.07 M	<0.07 M	<0.07 M	<0.07 M
Ethylbenzene	<0.004 mg/kg	TM116		<0.04 M	<0.04 M	<0.04 M	<0.04 M	<0.04 M	<0.04 M
p/m-Xylene	<0.01 mg/kg	TM116		<0.1 #	<0.1 #	<0.1 #	<0.1 #	<0.1 #	<0.1 #
o-Xylene	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M
Naphthalene	<0.013 mg/kg	TM116		<0.13 M	<0.13 M	<0.13 M	<0.13 M	<0.13 M	0.208 M
Sum of BTEX	<0.04 mg/kg	TM116		<0.4	<0.4	<0.4	<0.4	<0.4	<0.4

CERTIFICATE OF ANALYSIS

SDG:	191012-76	**Client Reference:**		**Report Number:**	527515
Location:	Llanwern	**Order Number:**	LLA681	**Superseded Report:**	527504

VOC MS (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-3+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	W99-02	W99-03	W99-04	W99-05	W100-01	W100-02
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	10/10/2019	10/10/2019	10/10/2019	10/10/2019	10/10/2019	10/10/2019
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	12/10/2019	12/10/2019	12/10/2019	12/10/2019	12/10/2019	12/10/2019
			SDG Ref	191012-76	191012-76	191012-76	191012-76	191012-76	191012-76
			Lab Sample No.(s)	20928373	20928378	20928385	20928390	20928394	20928405
			AGS Reference						
Dibromofluoromethane**	%	TM116		109	108	111	115	97.3	111
Toluene-d8**	%	TM116		98.2	97.9	99.4	96.9	96.7	97.6
4-Bromofluorobenzene**	%	TM116		92.2	95.4	92	93.9	89.5	91.2
Methyl Tertiary Butyl Ether	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 #	<0.1 #	<0.1 M	<0.1 M
Benzene	<0.009 mg/kg	TM116		<0.09 M	<0.09 M	<0.09 #	<0.09 #	<0.09 M	<0.09 M
Toluene	<0.007 mg/kg	TM116		<0.07 M	<0.07 M	<0.07 #	<0.07 #	<0.07 M	<0.07 M
Ethylbenzene	<0.004 mg/kg	TM116		<0.04 M	<0.04 M	<0.04 #	<0.04 #	<0.04 M	<0.04 M
p/m-Xylene	<0.01 mg/kg	TM116		<0.1 #	<0.1 #	<0.1 #	<0.1 #	<0.1 #	<0.1 #
o-Xylene	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 #	<0.1 #	<0.1 M	<0.1 M
Naphthalene	<0.013 mg/kg	TM116		<0.13 M	<0.13 M	<0.13 #	<0.13 #	<0.13 M	<0.13 M
Sum of BTEX	<0.04 mg/kg	TM116		<0.4	<0.4	<0.4	<0.4	<0.4	<0.4

Validated

CERTIFICATE OF ANALYSIS

SDG:	191012-76	**Client Reference:**		**Report Number:**	527515
Location:	Llanwern	**Order Number:**	LLA681	**Superseded Report:**	527504

VOC MS (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-3+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	W100-03	W100-04	W101-01	W101-02	W101-03	W102-01
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	10/10/2019	10/10/2019	10/10/2019	10/10/2019	10/10/2019	11/10/2019
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	12/10/2019	12/10/2019	12/10/2019	12/10/2019	12/10/2019	12/10/2019
			SDG Ref	191012-76	191012-76	191012-76	191012-76	191012-76	191012-76
			Lab Sample No.(s)	20928412	20928417	20928421	20928430	20928436	20928440
			AGS Reference						
Dibromofluoromethane**	%	TM116		110	109	113	108	109	108
Toluene-d8**	%	TM116		96.9	98	97	96.8	96.9	98.9
4-Bromofluorobenzene**	%	TM116		91.9	94.6	94.4	90.3	95.1	94.1
Methyl Tertiary Butyl Ether	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M
Benzene	<0.009 mg/kg	TM116		<0.09 M	<0.09 M	<0.09 M	<0.09 M	<0.09 M	<0.09 M
Toluene	<0.007 mg/kg	TM116		<0.07 M	<0.07 M	<0.07 M	<0.07 M	<0.07 M	<0.07 M
Ethylbenzene	<0.004 mg/kg	TM116		<0.04 M	<0.04 M	<0.04 M	<0.04 M	<0.04 M	<0.04 M
p/m-Xylene	<0.01 mg/kg	TM116		<0.1 #	<0.1 #	<0.1 #	<0.1 #	<0.1 #	<0.1 #
o-Xylene	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M
Naphthalene	<0.013 mg/kg	TM116		<0.13 M	<0.13 M	<0.13 M	<0.13 M	<0.13 M	<0.13 M
Sum of BTEX	<0.04 mg/kg	TM116		<0.4	<0.4	<0.4	<0.4	<0.4	<0.4

Validated

CERTIFICATE OF ANALYSIS

SDG:	191012-76	**Client Reference:**		**Report Number:**	527515
Location:	Llanwern	**Order Number:**	LLA681	**Superseded Report:**	527504

VOC MS (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-3+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	W102-02	W102-03	W103-01	W103-02	W103-03
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	11/10/2019	11/10/2019	11/10/2019	11/10/2019	11/10/2019
			Sample Time	00:00	00:00	00:00	00:00	00:00
			Date Received	12/10/2019	12/10/2019	12/10/2019	12/10/2019	12/10/2019
			SDG Ref	191012-76	191012-76	191012-76	191012-76	191012-76
			Lab Sample No.(s)	20928444	20928449	20928454	20928464	20928469
			AGS Reference					
Dibromofluoromethane**	%	TM116		103	89.7	104	96.3	104
Toluene-d8**	%	TM116		99.3	99.7	100	99.1	99.3
4-Bromofluorobenzene**	%	TM116		93.7	90.8	92.5	91.6	95.4
Methyl Tertiary Butyl Ether	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 M	<0.1 #	<0.1 M
Benzene	<0.009 mg/kg	TM116		<0.09 M	<0.09 M	<0.09 M	<0.09 #	<0.09 M
Toluene	<0.007 mg/kg	TM116		<0.07 M	<0.07 M	<0.07 M	<0.07 #	<0.07 M
Ethylbenzene	<0.004 mg/kg	TM116		<0.04 M	<0.04 M	<0.04 M	<0.04 #	<0.04 M
p/m-Xylene	<0.01 mg/kg	TM116		<0.1 #	<0.1 #	<0.1 #	<0.1 #	<0.1 #
o-Xylene	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 M	<0.1 #	<0.1 M
Naphthalene	<0.013 mg/kg	TM116		<0.13 M	<0.13 M	<0.13 M	<0.13 M	<0.13 M
Sum of BTEX	<0.04 mg/kg	TM116		<0.4	<0.4	<0.4	<0.4	<0.4

CERTIFICATE OF ANALYSIS

SDG:	191012-76	**Client Reference:**		**Report Number:**	527515
Location:	Llanwern	**Order Number:**	LLA681	**Superseded Report:**	527504

Asbestos Identification - Solid Samples

Results Legend

#	ISO17025 accredited.
M	*m*CERTS accredited.
*	Subcontracted test.
(F)	Trigger breach confirmed
1-5&✦§@	Sample deviation (see appendix)

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthophyllite	Fibrous Tremolite	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	W94-01 0.00 - 0.00 SOLID 10/10/2019 00:00:00 12/10/2019 11:49:00 191012-76 20928248 TM048	24/10/2019	James Richards	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	W94-03 0.00 - 0.00 SOLID 10/10/2019 00:00:00 12/10/2019 11:49:00 191012-76 20928399 TM048	24/10/2019	James Richards	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	W95-01 0.00 - 0.00 SOLID 10/10/2019 00:00:00 12/10/2019 11:49:00 191012-76 20928458 TM048	24/10/2019	Agnieszka Chelmowska	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	W95-03 0.00 - 0.00 SOLID 10/10/2019 00:00:00 12/10/2019 11:49:00 191012-76 20928484 TM048	24/10/2019	Agnieszka Chelmowska	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	W96-01 0.00 - 0.00 SOLID 10/10/2019 00:00:00 12/10/2019 11:49:00 191012-76 20928497 TM048	24/10/19	Andrzej Ferfecki	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	W96-03 0.00 - 0.00 SOLID 10/10/2019 00:00:00 12/10/2019 11:49:00 191012-76 20928253 TM048	24/10/2019	James Richards	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	W96-05 0.00 - 0.00 SOLID 10/10/2019 00:00:00 12/10/2019 11:49:00 191012-76 20928269 TM048	24/10/2019	James Richards	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	W97-01 0.00 - 0.00 SOLID 10/10/2019 00:00:00 12/10/2019 11:49:00 191012-76 20928284 TM048	24/10/2019	Barbara Urbanek-Walsh	Loose fibres in soil.	Not Detected (#)	Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected

Validated

CERTIFICATE OF ANALYSIS

SDG: 191012-76 **Client Reference:** **Report Number:** 527515
Location: Llanwern **Order Number:** LLA681 **Superseded Report:** 527504

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthophyllite	Fibrous Tremolite	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	W97-03 0.00 - 0.00 SOLID 10/10/2019 00:00:00 12/10/2019 11:49:00 191012-76 20928300 TM048	24/10/19	Andrzej Ferfecki	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	W97-05 0.00 - 0.00 SOLID 10/10/2019 00:00:00 12/10/2019 11:49:00 191012-76 20928321 TM048	24/10/2019	Agnieszka Chelmowska	Loose fibres in soil	Trace (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	W98-01 0.00 - 0.00 SOLID 10/10/2019 00:00:00 12/10/2019 11:49:00 191012-76 20928349 TM048	24/10/19	Andrzej Ferfecki	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	W98-03 0.00 - 0.00 SOLID 10/10/2019 00:00:00 12/10/2019 11:49:00 191012-76 20928360 TM048	24/10/2019	James Richards	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	W99-01 0.00 - 0.00 SOLID 10/10/2019 00:00:00 12/10/2019 11:49:00 191012-76 20928369 TM048	24/10/19	Andrzej Ferfecki	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	W99-03 0.00 - 0.00 SOLID 10/10/2019 00:00:00 12/10/2019 11:49:00 191012-76 20928378 TM048	24/10/19	Andrzej Ferfecki	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	W99-05 0.00 - 0.00 SOLID 10/10/2019 00:00:00 12/10/2019 11:49:00 191012-76 20928390 TM048	24/10/2019	James Richards	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	W100-02 0.00 - 0.00 SOLID 10/10/2019 00:00:00 12/10/2019 11:49:00 191012-76 20928405 TM048	24/10/2019	Barbara Urbanek-Walsh	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	W100-04 0.00 - 0.00 SOLID 10/10/2019 00:00:00 12/10/2019 11:49:00 191012-76 20928417 TM048	24/10/2019	Barbara Urbanek-Walsh	Loose fibres in soil.	Not Detected (#)	Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected

Validated

CERTIFICATE OF ANALYSIS

SDG:	191012-76	**Client Reference:**	**Report Number:** 527515
Location:	Llanwern	**Order Number:** LLA681	**Superseded Report:** 527504

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthophyllite	Fibrous Tremolite	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	W101-01 0.00 - 0.00 SOLID 10/10/2019 00:00:00 12/10/2019 11:49:00 191012-76 20928421 TM048	24/10/2019	Agnieszka Chelmowska	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	W101-03 0.00 - 0.00 SOLID 10/10/2019 00:00:00 12/10/2019 11:49:00 191012-76 20928436 TM048	24/10/2019	Agnieszka Chelmowska	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	W102-01 0.00 - 0.00 SOLID 11/10/2019 00:00:00 12/10/2019 11:49:00 191012-76 20928440 TM048	24/10/2019	Barbara Urbanek-Walsh	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	W102-03 0.00 - 0.00 SOLID 11/10/2019 00:00:00 12/10/2019 11:49:00 191012-76 20928449 TM048	24/10/2019	Agnieszka Chelmowska	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	W103-01 0.00 - 0.00 SOLID 11/10/2019 00:00:00 12/10/2019 11:49:00 191012-76 20928454 TM048	24/10/2019	Barbara Urbanek-Walsh	Loose fibres in soil.	Not Detected (#)	Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	W103-03 0.00 - 0.00 SOLID 11/10/2019 00:00:00 12/10/2019 11:49:00 191012-76 20928469 TM048	24/10/2019	Barbara Urbanek-Walsh	Loose fibres in soil.	Not Detected (#)	Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected

Asbestos Quantification - Full

CERTIFICATE OF ANALYSIS

SDG:	191012-76	**Client Reference:**		**Report Number:**	527515
Location:	Llanwern	**Order Number:**	LLA681	**Superseded Report:**	527504

Results Legend

#	ISO17025 accredited.
M	*m*CERTS accredited.
*	Subcontracted test.
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

		Additional Asbestos Components	Analysts Comments	Asbestos Quantification - Gravimetric - %	Asbestos Quantification - PCOM	Asbestos Quantification - Total - %
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	W97-01 0.00 - 0.00 SOLID 10/10/2019 00:00:00 12/10/2019 11:49:00 191012-76 20928284 TM304	None (#)	N/C	<0.001 (#)	<0.001 (#)	<0.001 (#)
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	W97-05 0.00 - 0.00 SOLID 10/10/2019 00:00:00 12/10/2019 11:49:00 191012-76 20928321 TM304	None (#)	N/A	<0.001 (#)	<0.001 (#)	<0.001 (#)
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	W100-04 0.00 - 0.00 SOLID 10/10/2019 00:00:00 12/10/2019 11:49:00 191012-76 20928417 TM304	None (#)	N/C	<0.001 (#)	<0.001 (#)	<0.001 (#)
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	W103-01 0.00 - 0.00 SOLID 11/10/2019 00:00:00 12/10/2019 11:49:00 191012-76 20928454 TM304	None (#)	N/A	0.0014 (#)	<0.001 (#)	0.0014 (#)
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	W103-03 0.00 - 0.00 SOLID 11/10/2019 00:00:00 12/10/2019 11:49:00 191012-76 20928469 TM304	None (#)	N/C	<0.001 (#)	<0.001 (#)	<0.001 (#)

CERTIFICATE OF ANALYSIS

SDG:	191012-76	**Client Reference:**		**Report Number:**	527515
Location:	Llanwern	**Order Number:**	LLA681	**Superseded Report:**	527504

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.100	**Natural Moisture Content (%)**	11.1
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	90
Particle Size <4mm	>95%		

Case	
SDG	191012-76
Lab Sample Number(s)	20928248
Sampled Date	10-Oct-2019
Customer Sample Ref.	W94-01
Depth (m)	0.00 - 0.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	0.0000198	<0.00001	0.000198	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.000558	<0.0005	0.00558	<0.005	-	-	-
Free Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.0143	<0.001	0.143	<0.01	-	-	-
Copper	0.00366	<0.0003	0.0366	<0.003	-	-	-
Lead	0.000275	<0.0002	0.00275	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	<0.001	<0.001	<0.01	<0.01	-	-	-
Vanadium	0.0174	<0.001	0.174	<0.01	-	-	-
Zinc	0.00241	<0.001	0.0241	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000563	<0.00001	0.000563	<0.0001	-	-	-
Acenaphthene by GCMS	0.0000765	<0.000005	0.000765	<0.00005	-	-	-
Acenaphthylene by GCMS	0.00000638	<0.000005	0.0000638	<0.00005	-	-	-
Fluoranthene by GCMS	0.000252	<0.000005	0.00252	<0.00005	-	-	-
Anthracene by GCMS	0.0000379	<0.000005	0.000379	<0.00005	-	-	-
Phenanthrene by GCMS	0.000167	<0.000005	0.00167	<0.00005	-	-	-
Fluorene by GCMS	0.0000136	<0.000005	0.000136	<0.00005	-	-	-
Chrysene by GCMS	0.000019	<0.000005	0.00019	<0.00005	-	-	-
Pyrene by GCMS	0.000226	<0.000005	0.00226	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.0000177	<0.000005	0.000177	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.000872	<0.000082	0.00872	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	14-Oct-2019
pH (pH Units)	12.00
Conductivity (µS/cm)	1,120.00
Temperature (°C)	17.10
Volume Leachant (Litres)	0.890

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	191012-76	**Client Reference:**		**Report Number:**	527515
Location:	Llanwern	**Order Number:**	LLA681	**Superseded Report:**	527504

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.100	**Natural Moisture Content (%)**	11.1
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	90
Particle Size <4mm	>95%		

Case	
SDG	191012-76
Lab Sample Number(s)	20928248
Sampled Date	10-Oct-2019
Customer Sample Ref.	W94-01
Depth (m)	0.00 - 0.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	14-Oct-2019
pH (pH Units)	12.00
Conductivity (µS/cm)	1,120.00
Temperature (°C)	17.10
Volume Leachant (Litres)	0.890

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	191012-76	**Client Reference:**		**Report Number:**	527515
Location:	Llanwern	**Order Number:**	LLA681	**Superseded Report:**	527504

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.098	**Natural Moisture Content (%)**	8.93
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	91.8
Particle Size <4mm	>95%		

Case	
SDG	191012-76
Lab Sample Number(s)	20928253
Sampled Date	10-Oct-2019
Customer Sample Ref.	W96-03
Depth (m)	0.00 - 0.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	0.0000164	<0.00001	0.000164	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	<0.0005	<0.0005	<0.005	<0.005	-	-	-
Free Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00776	<0.001	0.0776	<0.01	-	-	-
Copper	0.00247	<0.0003	0.0247	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	0.00182	<0.001	0.0182	<0.01	-	-	-
Vanadium	0.0409	<0.001	0.409	<0.01	-	-	-
Zinc	0.00199	<0.001	0.0199	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.000111	<0.00001	0.00111	<0.0001	-	-	-
Acenaphthene by GCMS	0.0000712	<0.000005	0.000712	<0.00005	-	-	-
Acenaphthylene by GCMS	0.0000142	<0.000005	0.000142	<0.00005	-	-	-
Fluoranthene by GCMS	0.000218	<0.000005	0.00218	<0.00005	-	-	-
Anthracene by GCMS	0.0000926	<0.000005	0.000926	<0.00005	-	-	-
Phenanthrene by GCMS	0.000332	<0.000005	0.00332	<0.00005	-	-	-
Fluorene by GCMS	0.0000802	<0.000005	0.000802	<0.00005	-	-	-
Chrysene by GCMS	0.0000197	<0.000005	0.000197	<0.00005	-	-	-
Pyrene by GCMS	0.000307	<0.000005	0.00307	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.0000153	<0.000005	0.000153	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.00126	<0.000082	0.0126	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	16-Oct-2019
pH (pH Units)	11.76
Conductivity (µS/cm)	657.00
Temperature (°C)	18.20
Volume Leachant (Litres)	0.892

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	191012-76	**Client Reference:**		**Report Number:**	527515
Location:	Llanwern	**Order Number:**	LLA681	**Superseded Report:**	527504

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.098	**Natural Moisture Content (%)**	8.93
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	91.8
Particle Size <4mm	>95%		

Case	
SDG	191012-76
Lab Sample Number(s)	20928253
Sampled Date	10-Oct-2019
Customer Sample Ref.	W96-03
Depth (m)	0.00 - 0.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	16-Oct-2019
pH (pH Units)	11.76
Conductivity (µS/cm)	657.00
Temperature (°C)	18.20
Volume Leachant (Litres)	0.892

Mcerts Certification does not apply to leachates

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Validated

CERTIFICATE OF ANALYSIS

SDG:	191012-76	**Client Reference:**		**Report Number:**	527515
Location:	Llanwern	**Order Number:**	LLA681	**Superseded Report:**	527504

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.101	**Natural Moisture Content (%)**	12.4
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	89
Particle Size <4mm	>95%		

Case	
SDG	191012-76
Lab Sample Number(s)	20928264
Sampled Date	10-Oct-2019
Customer Sample Ref.	W96-04
Depth (m)	0.00 - 0.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	0.0000179	<0.00001	0.000179	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	<0.0005	<0.0005	<0.005	<0.005	-	-	-
Free Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00505	<0.001	0.0505	<0.01	-	-	-
Copper	0.00158	<0.0003	0.0158	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	0.00321	<0.003	0.0321	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	0.00191	<0.001	0.0191	<0.01	-	-	-
Vanadium	0.0587	<0.001	0.587	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.000117	<0.00001	0.00117	<0.0001	-	-	-
Acenaphthene by GCMS	0.0000222	<0.000005	0.000222	<0.00005	-	-	-
Acenaphthylene by GCMS	0.0000212	<0.000005	0.000212	<0.00005	-	-	-
Fluoranthene by GCMS	0.000191	<0.000005	0.00191	<0.00005	-	-	-
Anthracene by GCMS	0.0000422	<0.000005	0.000422	<0.00005	-	-	-
Phenanthrene by GCMS	0.000159	<0.000005	0.00159	<0.00005	-	-	-
Fluorene by GCMS	0.0000295	<0.000005	0.000295	<0.00005	-	-	-
Chrysene by GCMS	0.0000256	<0.000005	0.000256	<0.00005	-	-	-
Pyrene by GCMS	0.000344	<0.000005	0.00344	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.0000127	<0.000005	0.000127	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.000965	<0.000082	0.00965	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	15-Oct-2019
pH (pH Units)	11.73
Conductivity (µS/cm)	658.00
Temperature (°C)	18.40
Volume Leachant (Litres)	0.889

Mcerts Certification does not apply to leachates
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CERTIFICATE OF ANALYSIS

SDG:	191012-76	**Client Reference:**		**Report Number:**	527515
Location:	Llanwern	**Order Number:**	LLA681	**Superseded Report:**	527504

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.101	**Natural Moisture Content (%)**	12.4
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	89
Particle Size <4mm	>95%		

Case	
SDG	191012-76
Lab Sample Number(s)	20928264
Sampled Date	10-Oct-2019
Customer Sample Ref.	W96-04
Depth (m)	0.00 - 0.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	15-Oct-2019
pH (pH Units)	11.73
Conductivity (µS/cm)	658.00
Temperature (°C)	18.40
Volume Leachant (Litres)	0.889

Mcerts Certification does not apply to leachates

29/10/2019 16:43:08

16:42:41 29/10/2019

CERTIFICATE OF ANALYSIS

SDG:	191012-76	**Client Reference:**		**Report Number:**	527515
Location:	Llanwern	**Order Number:**	LLA681	**Superseded Report:**	527504

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.099	**Natural Moisture Content (%)**	9.53
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	91.3
Particle Size <4mm	>95%		

Case	
SDG	191012-76
Lab Sample Number(s)	20928269
Sampled Date	10-Oct-2019
Customer Sample Ref.	W96-05
Depth (m)	0.00 - 0.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00518	<0.0005	0.0518	<0.005	-	-	-
Free Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.0067	<0.001	0.067	<0.01	-	-	-
Copper	0.00421	<0.0003	0.0421	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	0.00269	<0.001	0.0269	<0.01	-	-	-
Vanadium	0.09	<0.001	0.9	<0.01	-	-	-
Zinc	0.00223	<0.001	0.0223	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000273	<0.00001	0.000273	<0.0001	-	-	-
Acenaphthene by GCMS	0.00000862	<0.000005	0.0000862	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000524	<0.000005	0.000524	<0.00005	-	-	-
Anthracene by GCMS	0.0000129	<0.000005	0.000129	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000407	<0.000005	0.000407	<0.00005	-	-	-
Fluorene by GCMS	0.00000824	<0.000005	0.0000824	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.000056	<0.000005	0.00056	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.000206	<0.000082	0.00206	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	16-Oct-2019
pH (pH Units)	10.93
Conductivity (µS/cm)	248.00
Temperature (°C)	17.40
Volume Leachant (Litres)	0.891

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	191012-76	**Client Reference:**		**Report Number:**	527515
Location:	Llanwern	**Order Number:**	LLA681	**Superseded Report:**	527504

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.099	**Natural Moisture Content (%)**	9.53
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	91.3
Particle Size <4mm	>95%		

Case	
SDG	191012-76
Lab Sample Number(s)	20928269
Sampled Date	10-Oct-2019
Customer Sample Ref.	W96-05
Depth (m)	0.00 - 0.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	16-Oct-2019
pH (pH Units)	10.93
Conductivity (µS/cm)	248.00
Temperature (°C)	17.40
Volume Leachant (Litres)	0.891

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	191012-76	**Client Reference:**		**Report Number:**	527515
Location:	Llanwern	**Order Number:**	LLA681	**Superseded Report:**	527504

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.101	**Natural Moisture Content (%)**	12.4
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	89
Particle Size <4mm	>95%		

Case	
SDG	191012-76
Lab Sample Number(s)	20928278
Sampled Date	10-Oct-2019
Customer Sample Ref.	W96-06
Depth (m)	0.00 - 0.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00769	<0.0005	0.0769	<0.005	-	-	-
Free Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00722	<0.001	0.0722	<0.01	-	-	-
Copper	0.00465	<0.0003	0.0465	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.000424	<0.0004	0.00424	<0.004	-	-	-
Selenium	0.00208	<0.001	0.0208	<0.01	-	-	-
Vanadium	0.0584	<0.001	0.584	<0.01	-	-	-
Zinc	0.00255	<0.001	0.0255	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.00016	<0.00001	0.0016	<0.0001	-	-	-
Acenaphthene by GCMS	0.0000226	<0.000005	0.000226	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.000057	<0.000005	0.00057	<0.00005	-	-	-
Anthracene by GCMS	0.0000125	<0.000005	0.000125	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000401	<0.000005	0.000401	<0.00005	-	-	-
Fluorene by GCMS	0.0000104	<0.000005	0.000104	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.0000801	<0.000005	0.000801	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.000383	<0.000082	0.00383	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	16-Oct-2019
pH (pH Units)	11.34
Conductivity (µS/cm)	357.00
Temperature (°C)	17.10
Volume Leachant (Litres)	0.889

Mcerts Certification does not apply to leachates

29/10/2019 16:43:08

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CERTIFICATE OF ANALYSIS

SDG:	191012-76	**Client Reference:**		**Report Number:**	527515
Location:	Llanwern	**Order Number:**	LLA681	**Superseded Report:**	527504

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.101	**Natural Moisture Content (%)**	12.4
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	89
Particle Size <4mm	>95%		

Case	
SDG	191012-76
Lab Sample Number(s)	20928278
Sampled Date	10-Oct-2019
Customer Sample Ref.	W96-06
Depth (m)	0.00 - 0.00

Eluate Analysis	**C_2** Concⁿ in 10:1 eluate (mg/l)		**A_2** 10:1 concⁿ leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	16-Oct-2019
pH (pH Units)	11.34
Conductivity (µS/cm)	357.00
Temperature (°C)	17.10
Volume Leachant (Litres)	0.889

Mcerts Certification does not apply to leachates

29/10/2019 16:43:08

16:42:41 29/10/2019

CERTIFICATE OF ANALYSIS

SDG:	191012-76	**Client Reference:**		**Report Number:**	527515
Location:	Llanwern	**Order Number:**	LLA681	**Superseded Report:**	527504

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.098	**Natural Moisture Content (%)**	8.81
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	91.9
Particle Size <4mm	>95%		

Case	
SDG	191012-76
Lab Sample Number(s)	20928284
Sampled Date	10-Oct-2019
Customer Sample Ref.	W97-01
Depth (m)	0.00 - 0.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	0.0000241	<0.00001	0.000241	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	<0.0005	<0.0005	<0.005	<0.005	-	-	-
Free Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00707	<0.001	0.0707	<0.01	-	-	-
Copper	0.00218	<0.0003	0.0218	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	0.00106	<0.001	0.0106	<0.01	-	-	-
Vanadium	0.0891	<0.001	0.891	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000606	<0.00001	0.000606	<0.0001	-	-	-
Acenaphthene by GCMS	0.0000295	<0.000005	0.000295	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.000256	<0.000005	0.00256	<0.00005	-	-	-
Anthracene by GCMS	0.0000328	<0.000005	0.000328	<0.00005	-	-	-
Phenanthrene by GCMS	0.000134	<0.000005	0.00134	<0.00005	-	-	-
Fluorene by GCMS	0.0000139	<0.000005	0.000139	<0.00005	-	-	-
Chrysene by GCMS	0.0000676	<0.000005	0.000676	<0.00005	-	-	-
Pyrene by GCMS	0.000467	<0.000005	0.00467	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.0000257	<0.000005	0.000257	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.0000132	<0.000005	0.000132	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.00000672	<0.000005	0.0000672	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.00111	<0.000082	0.0111	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	15-Oct-2019
pH (pH Units)	11.66
Conductivity (µS/cm)	603.00
Temperature (°C)	16.30
Volume Leachant (Litres)	0.892

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	191012-76	**Client Reference:**		**Report Number:**	527515
Location:	Llanwern	**Order Number:**	LLA681	**Superseded Report:**	527504

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.098	**Natural Moisture Content (%)**	8.81
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	91.9
Particle Size <4mm	>95%		

Case	
SDG	191012-76
Lab Sample Number(s)	20928284
Sampled Date	10-Oct-2019
Customer Sample Ref.	W97-01
Depth (m)	0.00 - 0.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	15-Oct-2019
pH (pH Units)	11.66
Conductivity (µS/cm)	603.00
Temperature (°C)	16.30
Volume Leachant (Litres)	0.892

Mcerts Certification does not apply to leachates

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Validated

CERTIFICATE OF ANALYSIS

SDG:	191012-76	**Client Reference:**		**Report Number:**	527515
Location:	Llanwern	**Order Number:**	LLA681	**Superseded Report:**	527504

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.101	**Natural Moisture Content (%)**	12.4
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	89
Particle Size <4mm	>95%		

Case	
SDG	191012-76
Lab Sample Number(s)	20928292
Sampled Date	10-Oct-2019
Customer Sample Ref.	W97-02
Depth (m)	0.00 - 0.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00481	<0.0005	0.0481	<0.005	-	-	-
Free Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00193	<0.001	0.0193	<0.01	-	-	-
Copper	0.00423	<0.0003	0.0423	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.000576	<0.0004	0.00576	<0.004	-	-	-
Selenium	0.00468	<0.001	0.0468	<0.01	-	-	-
Vanadium	0.0667	<0.001	0.667	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000519	<0.00001	0.000519	<0.0001	-	-	-
Acenaphthene by GCMS	0.0000168	<0.000005	0.000168	<0.00005	-	-	-
Acenaphthylene by GCMS	0.00000513	<0.000005	0.0000513	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000697	<0.000005	0.000697	<0.00005	-	-	-
Anthracene by GCMS	0.0000307	<0.000005	0.000307	<0.00005	-	-	-
Phenanthrene by GCMS	0.00011	<0.000005	0.0011	<0.00005	-	-	-
Fluorene by GCMS	0.0000177	<0.000005	0.000177	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.0000479	<0.000005	0.000479	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.00000977	<0.000005	0.0000977	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	0.00000658	<0.000005	0.0000658	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.000366	<0.000082	0.00366	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	15-Oct-2019
pH (pH Units)	10.94
Conductivity (µS/cm)	309.00
Temperature (°C)	17.90
Volume Leachant (Litres)	0.889

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	191012-76	**Client Reference:**		**Report Number:**	527515
Location:	Llanwern	**Order Number:**	LLA681	**Superseded Report:**	527504

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.101	**Natural Moisture Content (%)**	12.4
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	89
Particle Size <4mm	>95%		

Case	
SDG	191012-76
Lab Sample Number(s)	20928292
Sampled Date	10-Oct-2019
Customer Sample Ref.	W97-02
Depth (m)	0.00 - 0.00

Eluate Analysis	**C_2** Concⁿ in 10:1 eluate (mg/l)		**A_2** 10:1 concⁿ leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	15-Oct-2019
pH (pH Units)	10.94
Conductivity (µS/cm)	309.00
Temperature (°C)	17.90
Volume Leachant (Litres)	0.889

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	191012-76	**Client Reference:**		**Report Number:**	527515
Location:	Llanwern	**Order Number:**	LLA681	**Superseded Report:**	527504

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.098	**Natural Moisture Content (%)**	8.46
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	92.2
Particle Size <4mm	>95%		

Case	
SDG	191012-76
Lab Sample Number(s)	20928300
Sampled Date	10-Oct-2019
Customer Sample Ref.	W97-03
Depth (m)	0.00 - 0.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00482	<0.0005	0.0482	<0.005	-	-	-
Free Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00295	<0.001	0.0295	<0.01	-	-	-
Copper	0.00496	<0.0003	0.0496	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.000732	<0.0004	0.00732	<0.004	-	-	-
Selenium	0.00284	<0.001	0.0284	<0.01	-	-	-
Vanadium	0.0854	<0.001	0.854	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000739	<0.00001	0.000739	<0.0001	-	-	-
Acenaphthene by GCMS	0.0000211	<0.000005	0.000211	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000876	<0.000005	0.000876	<0.00005	-	-	-
Anthracene by GCMS	0.0000271	<0.000005	0.000271	<0.00005	-	-	-
Phenanthrene by GCMS	0.000104	<0.000005	0.00104	<0.00005	-	-	-
Fluorene by GCMS	0.0000199	<0.000005	0.000199	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.0000744	<0.000005	0.000744	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.00000502	<0.000005	0.0000502	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.000413	<0.000082	0.00413	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	15-Oct-2019
pH (pH Units)	10.86
Conductivity (µS/cm)	289.00
Temperature (°C)	17.50
Volume Leachant (Litres)	0.892

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	191012-76	**Client Reference:**		**Report Number:**	527515
Location:	Llanwern	**Order Number:**	LLA681	**Superseded Report:**	527504

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.098	**Natural Moisture Content (%)**	8.46
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	92.2
Particle Size <4mm	>95%		

Case	
SDG	191012-76
Lab Sample Number(s)	20928300
Sampled Date	10-Oct-2019
Customer Sample Ref.	W97-03
Depth (m)	0.00 - 0.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	15-Oct-2019
pH (pH Units)	10.86
Conductivity (µS/cm)	289.00
Temperature (°C)	17.50
Volume Leachant (Litres)	0.892

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	191012-76	**Client Reference:**		**Report Number:**	527515
Location:	Llanwern	**Order Number:**	LLA681	**Superseded Report:**	527504

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.100	**Natural Moisture Content (%)**	10.7
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	90.3
Particle Size <4mm	>95%		

Case	
SDG	191012-76
Lab Sample Number(s)	20928310
Sampled Date	10-Oct-2019
Customer Sample Ref.	W97-04
Depth (m)	0.00 - 0.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00677	<0.0005	0.0677	<0.005	-	-	-
Free Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00342	<0.001	0.0342	<0.01	-	-	-
Copper	0.0063	<0.0003	0.063	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.000632	<0.0004	0.00632	<0.004	-	-	-
Selenium	0.00265	<0.001	0.0265	<0.01	-	-	-
Vanadium	0.087	<0.001	0.87	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.000021	<0.00001	0.00021	<0.0001	-	-	-
Acenaphthene by GCMS	0.00000779	<0.000005	0.0000779	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000373	<0.000005	0.000373	<0.00005	-	-	-
Anthracene by GCMS	0.0000126	<0.000005	0.000126	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000511	<0.000005	0.000511	<0.00005	-	-	-
Fluorene by GCMS	0.00000909	<0.000005	0.0000909	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.0000306	<0.000005	0.000306	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.000169	<0.000082	0.00169	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	15-Oct-2019
pH (pH Units)	10.53
Conductivity (µS/cm)	229.00
Temperature (°C)	17.50
Volume Leachant (Litres)	0.890

Mcerts Certification does not apply to leachates

29/10/2019 16:43:08

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CERTIFICATE OF ANALYSIS

SDG:	191012-76	**Client Reference:**		**Report Number:**	527515
Location:	Llanwern	**Order Number:**	LLA681	**Superseded Report:**	527504

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.100	**Natural Moisture Content (%)**	10.7
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	90.3
Particle Size <4mm	>95%		

Case	
SDG	191012-76
Lab Sample Number(s)	20928310
Sampled Date	10-Oct-2019
Customer Sample Ref.	W97-04
Depth (m)	0.00 - 0.00

Eluate Analysis	**C_2** Concⁿ in 10:1 eluate (mg/l)		**A_2** 10:1 concⁿ leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	15-Oct-2019
pH (pH Units)	10.53
Conductivity (µS/cm)	229.00
Temperature (°C)	17.50
Volume Leachant (Litres)	0.890

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	191012-76	**Client Reference:**		**Report Number:**	527515
Location:	Llanwern	**Order Number:**	LLA681	**Superseded Report:**	527504

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.098	**Natural Moisture Content (%)**	9.41
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	91.4
Particle Size <4mm	>95%		

Case	
SDG	191012-76
Lab Sample Number(s)	20928321
Sampled Date	10-Oct-2019
Customer Sample Ref.	W97-05
Depth (m)	0.00 - 0.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	0.0000211	<0.00001	0.000211	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	<0.0005	<0.0005	<0.005	<0.005	-	-	-
Free Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.0114	<0.001	0.114	<0.01	-	-	-
Copper	0.00465	<0.0003	0.0465	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.000545	<0.0004	0.00545	<0.004	-	-	-
Selenium	0.00286	<0.001	0.0286	<0.01	-	-	-
Vanadium	0.0273	<0.001	0.273	<0.01	-	-	-
Zinc	0.00182	<0.001	0.0182	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000663	<0.00001	0.000663	<0.0001	-	-	-
Acenaphthene by GCMS	0.0000619	<0.000005	0.000619	<0.00005	-	-	-
Acenaphthylene by GCMS	0.00000642	<0.000005	0.0000642	<0.00005	-	-	-
Fluoranthene by GCMS	0.00075	<0.000005	0.0075	<0.00005	-	-	-
Anthracene by GCMS	0.000045	<0.000005	0.00045	<0.00005	-	-	-
Phenanthrene by GCMS	0.000328	<0.000005	0.00328	<0.00005	-	-	-
Fluorene by GCMS	0.0000137	<0.000005	0.000137	<0.00005	-	-	-
Chrysene by GCMS	0.0000822	<0.000005	0.000822	<0.00005	-	-	-
Pyrene by GCMS	0.000484	<0.000005	0.00484	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.0000152	<0.000005	0.000152	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.0000175	<0.000005	0.000175	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.00000562	<0.000005	0.0000562	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.00188	<0.000082	0.0188	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	16-Oct-2019
pH (pH Units)	11.83
Conductivity (µS/cm)	823.00
Temperature (°C)	16.40
Volume Leachant (Litres)	0.892

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	191012-76	**Client Reference:**		**Report Number:**	527515
Location:	Llanwern	**Order Number:**	LLA681	**Superseded Report:**	527504

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.098	**Natural Moisture Content (%)**	9.41
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	91.4
Particle Size <4mm	>95%		

Case	
SDG	191012-76
Lab Sample Number(s)	20928321
Sampled Date	10-Oct-2019
Customer Sample Ref.	W97-05
Depth (m)	0.00 - 0.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	0.015	<0.01	0.15	<0.1	-	-	-
Aromatics >EC16-EC21	0.032	<0.01	0.32	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	0.047	<0.01	0.47	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	0.048	<0.01	0.48	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	16-Oct-2019
pH (pH Units)	11.83
Conductivity (µS/cm)	823.00
Temperature (°C)	16.40
Volume Leachant (Litres)	0.892

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	191012-76	**Client Reference:**		**Report Number:**	527515
Location:	Llanwern	**Order Number:**	LLA681	**Superseded Report:**	527504

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.100	**Natural Moisture Content (%)**	11.1
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	90
Particle Size <4mm	>95%		

Case	
SDG	191012-76
Lab Sample Number(s)	20928330
Sampled Date	10-Oct-2019
Customer Sample Ref.	W97-06
Depth (m)	0.00 - 0.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.0059	<0.0005	0.059	<0.005	-	-	-
Free Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00224	<0.001	0.0224	<0.01	-	-	-
Copper	0.00355	<0.0003	0.0355	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.000829	<0.0004	0.00829	<0.004	-	-	-
Selenium	0.00682	<0.001	0.0682	<0.01	-	-	-
Vanadium	0.064	<0.001	0.64	<0.01	-	-	-
Zinc	0.00177	<0.001	0.0177	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.0389	<0.019	0.389	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.000623	<0.00001	0.00623	<0.0001	-	-	-
Acenaphthene by GCMS	0.000114	<0.000005	0.00114	<0.00005	-	-	-
Acenaphthylene by GCMS	0.00000516	<0.000005	0.0000516	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000323	<0.000005	0.000323	<0.00005	-	-	-
Anthracene by GCMS	0.0000409	<0.000005	0.000409	<0.00005	-	-	-
Phenanthrene by GCMS	0.000116	<0.000005	0.00116	<0.00005	-	-	-
Fluorene by GCMS	0.0000894	<0.000005	0.000894	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.0000319	<0.000005	0.000319	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.00105	<0.000082	0.0105	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	16-Oct-2019
pH (pH Units)	11.24
Conductivity (µS/cm)	350.00
Temperature (°C)	17.10
Volume Leachant (Litres)	0.890

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	191012-76	**Client Reference:**		**Report Number:**	527515
Location:	Llanwern	**Order Number:**	LLA681	**Superseded Report:**	527504

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.100	**Natural Moisture Content (%)**	11.1
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	90
Particle Size <4mm	>95%		

Case	
SDG	191012-76
Lab Sample Number(s)	20928330
Sampled Date	10-Oct-2019
Customer Sample Ref.	W97-06
Depth (m)	0.00 - 0.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	16-Oct-2019
pH (pH Units)	11.24
Conductivity (µS/cm)	350.00
Temperature (°C)	17.10
Volume Leachant (Litres)	0.890

Mcerts Certification does not apply to leachates

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Validated

CERTIFICATE OF ANALYSIS

SDG:	191012-76	**Client Reference:**		**Report Number:**	527515
Location:	Llanwern	**Order Number:**	LLA681	**Superseded Report:**	527504

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.100	**Natural Moisture Content (%)**	11.1
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	90
Particle Size <4mm	>95%		

Case	
SDG	191012-76
Lab Sample Number(s)	20928340
Sampled Date	10-Oct-2019
Customer Sample Ref.	W94-02
Depth (m)	0.00 - 0.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	0.000018	<0.00001	0.00018	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00164	<0.0005	0.0164	<0.005	-	-	-
Free Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00303	<0.001	0.0303	<0.01	-	-	-
Copper	0.00344	<0.0003	0.0344	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	0.00177	<0.001	0.0177	<0.01	-	-	-
Vanadium	0.0595	<0.001	0.595	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000274	<0.00001	0.000274	<0.0001	-	-	-
Acenaphthene by GCMS	0.0000139	<0.000005	0.000139	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000684	<0.000005	0.000684	<0.00005	-	-	-
Anthracene by GCMS	0.0000178	<0.000005	0.000178	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000533	<0.000005	0.000533	<0.00005	-	-	-
Fluorene by GCMS	0.00000893	<0.000005	0.0000893	<0.00005	-	-	-
Chrysene by GCMS	0.0000146	<0.000005	0.000146	<0.00005	-	-	-
Pyrene by GCMS	0.000162	<0.000005	0.00162	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.0000119	<0.000005	0.000119	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.000378	<0.000082	0.00378	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	14-Oct-2019
pH (pH Units)	11.25
Conductivity (µS/cm)	321.00
Temperature (°C)	17.30
Volume Leachant (Litres)	0.890

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	191012-76	**Client Reference:**		**Report Number:**	527515
Location:	Llanwern	**Order Number:**	LLA681	**Superseded Report:**	527504

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.100	**Natural Moisture Content (%)**	11.1
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	90
Particle Size <4mm	>95%		

Case	
SDG	191012-76
Lab Sample Number(s)	20928340
Sampled Date	10-Oct-2019
Customer Sample Ref.	W94-02
Depth (m)	0.00 - 0.00

Eluate Analysis	**C_2** Concⁿ in 10:1 eluate (mg/l)		**A_2** 10:1 concⁿ leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	14-Oct-2019
pH (pH Units)	11.25
Conductivity (µS/cm)	321.00
Temperature (°C)	17.30
Volume Leachant (Litres)	0.890

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	191012-76	**Client Reference:**		**Report Number:**	527515
Location:	Llanwern	**Order Number:**	LLA681	**Superseded Report:**	527504

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.097	**Natural Moisture Content (%)**	7.87
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	92.7
Particle Size <4mm	>95%		

Case	
SDG	191012-76
Lab Sample Number(s)	20928349
Sampled Date	10-Oct-2019
Customer Sample Ref.	W98-01
Depth (m)	0.00 - 0.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00363	<0.0005	0.0363	<0.005	-	-	-
Free Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00161	<0.001	0.0161	<0.01	-	-	-
Copper	0.000598	<0.0003	0.00598	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	0.00273	<0.001	0.0273	<0.01	-	-	-
Vanadium	0.0338	<0.001	0.338	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000247	<0.00001	0.000247	<0.0001	-	-	-
Acenaphthene by GCMS	0.0000117	<0.000005	0.000117	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000487	<0.000005	0.000487	<0.00005	-	-	-
Anthracene by GCMS	0.000024	<0.000005	0.00024	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000745	<0.000005	0.000745	<0.00005	-	-	-
Fluorene by GCMS	0.0000165	<0.000005	0.000165	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.0000267	<0.000005	0.000267	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.000227	<0.000082	0.00227	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	15-Oct-2019
pH (pH Units)	9.74
Conductivity (µS/cm)	151.00
Temperature (°C)	17.40
Volume Leachant (Litres)	0.893

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	191012-76	**Client Reference:**		**Report Number:**	527515
Location:	Llanwern	**Order Number:**	LLA681	**Superseded Report:**	527504

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.097	**Natural Moisture Content (%)**	7.87
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	92.7
Particle Size <4mm	>95%		

Case	
SDG	191012-76
Lab Sample Number(s)	20928349
Sampled Date	10-Oct-2019
Customer Sample Ref.	W98-01
Depth (m)	0.00 - 0.00

Eluate Analysis	**C_2** Concⁿ in 10:1 eluate (mg/l)		**A_2** 10:1 concⁿ leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	15-Oct-2019
pH (pH Units)	9.74
Conductivity (µS/cm)	151.00
Temperature (°C)	17.40
Volume Leachant (Litres)	0.893

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	191012-76	**Client Reference:**		**Report Number:**	527515
Location:	Llanwern	**Order Number:**	LLA681	**Superseded Report:**	527504

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.098	**Natural Moisture Content (%)**	9.41
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	91.4
Particle Size <4mm	>95%		

Case	
SDG	191012-76
Lab Sample Number(s)	20928354
Sampled Date	10-Oct-2019
Customer Sample Ref.	W98-02
Depth (m)	0.00 - 0.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00354	<0.0005	0.0354	<0.005	-	-	-
Free Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.000646	<0.0003	0.00646	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	0.00144	<0.001	0.0144	<0.01	-	-	-
Vanadium	0.0199	<0.001	0.199	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000107	<0.00001	0.000107	<0.0001	-	-	-
Acenaphthene by GCMS	0.000029	<0.000005	0.00029	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000187	<0.000005	0.000187	<0.00005	-	-	-
Anthracene by GCMS	0.0000134	<0.000005	0.000134	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000411	<0.000005	0.000411	<0.00005	-	-	-
Fluorene by GCMS	0.0000257	<0.000005	0.000257	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.0000117	<0.000005	0.000117	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.00015	<0.000082	0.0015	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	15-Oct-2019
pH (pH Units)	9.63
Conductivity (µS/cm)	156.00
Temperature (°C)	18.10
Volume Leachant (Litres)	0.892

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	191012-76	**Client Reference:**		**Report Number:**	527515
Location:	Llanwern	**Order Number:**	LLA681	**Superseded Report:**	527504

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.098	**Natural Moisture Content (%)**	9.41
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	91.4
Particle Size <4mm	>95%		

Case	
SDG	191012-76
Lab Sample Number(s)	20928354
Sampled Date	10-Oct-2019
Customer Sample Ref.	W98-02
Depth (m)	0.00 - 0.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	15-Oct-2019
pH (pH Units)	9.63
Conductivity (µS/cm)	156.00
Temperature (°C)	18.10
Volume Leachant (Litres)	0.892

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	191012-76	**Client Reference:**		**Report Number:**	527515
Location:	Llanwern	**Order Number:**	LLA681	**Superseded Report:**	527504

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.101	**Natural Moisture Content (%)**	12.4
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	89
Particle Size <4mm	>95%		

Case	
SDG	191012-76
Lab Sample Number(s)	20928360
Sampled Date	10-Oct-2019
Customer Sample Ref.	W98-03
Depth (m)	0.00 - 0.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00578	<0.0005	0.0578	<0.005	-	-	-
Free Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00135	<0.001	0.0135	<0.01	-	-	-
Copper	0.0032	<0.0003	0.032	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.0004	<0.0004	0.004	<0.004	-	-	-
Selenium	0.0025	<0.001	0.025	<0.01	-	-	-
Vanadium	0.103	<0.001	1.03	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000126	<0.00001	0.000126	<0.0001	-	-	-
Acenaphthene by GCMS	0.0000122	<0.000005	0.000122	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000409	<0.000005	0.000409	<0.00005	-	-	-
Anthracene by GCMS	0.0000117	<0.000005	0.000117	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000505	<0.000005	0.000505	<0.00005	-	-	-
Fluorene by GCMS	0.0000116	<0.000005	0.000116	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.000036	<0.000005	0.00036	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.0000119	<0.000005	0.000119	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.000187	<0.000082	0.00187	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	15-Oct-2019
pH (pH Units)	10.08
Conductivity (µS/cm)	241.00
Temperature (°C)	18.00
Volume Leachant (Litres)	0.889

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	191012-76	**Client Reference:**		**Report Number:**	527515
Location:	Llanwern	**Order Number:**	LLA681	**Superseded Report:**	527504

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.101	**Natural Moisture Content (%)**	12.4
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	89
Particle Size <4mm	>95%		

Case	
SDG	191012-76
Lab Sample Number(s)	20928360
Sampled Date	10-Oct-2019
Customer Sample Ref.	W98-03
Depth (m)	0.00 - 0.00

Eluate Analysis	**C_2** Concⁿ in 10:1 eluate (mg/l)		**A_2** 10:1 concⁿ leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	15-Oct-2019
pH (pH Units)	10.08
Conductivity (µS/cm)	241.00
Temperature (°C)	18.00
Volume Leachant (Litres)	0.889

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	191012-76	**Client Reference:**		**Report Number:**	527515
Location:	Llanwern	**Order Number:**	LLA681	**Superseded Report:**	527504

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.106	**Natural Moisture Content (%)**	17.6
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	85
Particle Size <4mm	>95%		

Case	
SDG	191012-76
Lab Sample Number(s)	20928365
Sampled Date	10-Oct-2019
Customer Sample Ref.	W98-04
Depth (m)	0.00 - 0.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00136	<0.0005	0.0136	<0.005	-	-	-
Free Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00428	<0.001	0.0428	<0.01	-	-	-
Copper	0.0212	<0.0003	0.212	<0.003	-	-	-
Lead	0.0891	<0.0002	0.891	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.00464	<0.0004	0.0464	<0.004	-	-	-
Selenium	0.00128	<0.001	0.0128	<0.01	-	-	-
Vanadium	<0.001	<0.001	<0.01	<0.01	-	-	-
Zinc	0.0453	<0.001	0.453	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.000236	<0.00001	0.00236	<0.0001	-	-	-
Acenaphthene by GCMS	0.0000578	<0.000005	0.000578	<0.00005	-	-	-
Acenaphthylene by GCMS	0.0000251	<0.000005	0.000251	<0.00005	-	-	-
Fluoranthene by GCMS	0.000171	<0.000005	0.00171	<0.00005	-	-	-
Anthracene by GCMS	0.0000565	<0.000005	0.000565	<0.00005	-	-	-
Phenanthrene by GCMS	0.000474	<0.000005	0.00474	<0.00005	-	-	-
Fluorene by GCMS	0.0000207	<0.000005	0.000207	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.000125	<0.000005	0.00125	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.00000547	<0.000005	0.0000547	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.00117	<0.000082	0.0117	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	15-Oct-2019
pH (pH Units)	12.85
Conductivity (µS/cm)	7,700.00
Temperature (°C)	17.90
Volume Leachant (Litres)	0.884

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	191012-76	**Client Reference:**		**Report Number:**	527515
Location:	Llanwern	**Order Number:**	LLA681	**Superseded Report:**	527504

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.106	**Natural Moisture Content (%)**	17.6
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	85
Particle Size <4mm	>95%		

Case	
SDG	191012-76
Lab Sample Number(s)	20928365
Sampled Date	10-Oct-2019
Customer Sample Ref.	W98-04
Depth (m)	0.00 - 0.00

Eluate Analysis	**C_2** Concⁿ in 10:1 eluate (mg/l)		**A_2** 10:1 concⁿ leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	15-Oct-2019
pH (pH Units)	12.85
Conductivity (µS/cm)	7,700.00
Temperature (°C)	17.90
Volume Leachant (Litres)	0.884

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	191012-76	**Client Reference:**		**Report Number:**	527515
Location:	Llanwern	**Order Number:**	LLA681	**Superseded Report:**	527504

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.105	**Natural Moisture Content (%)**	16.3
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	86
Particle Size <4mm	>95%		

Case	
SDG	191012-76
Lab Sample Number(s)	20928369
Sampled Date	10-Oct-2019
Customer Sample Ref.	W99-01
Depth (m)	0.00 - 0.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00076	<0.0005	0.0076	<0.005	-	-	-
Free Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00398	<0.001	0.0398	<0.01	-	-	-
Copper	0.00593	<0.0003	0.0593	<0.003	-	-	-
Lead	0.12	<0.0002	1.2	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.00138	<0.0004	0.0138	<0.004	-	-	-
Selenium	0.00171	<0.001	0.0171	<0.01	-	-	-
Vanadium	<0.001	<0.001	<0.01	<0.01	-	-	-
Zinc	0.0536	<0.001	0.536	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.00124	<0.00001	0.0124	<0.0001	-	-	-
Acenaphthene by GCMS	0.000141	<0.000005	0.00141	<0.00005	-	-	-
Acenaphthylene by GCMS	0.0000809	<0.000005	0.000809	<0.00005	-	-	-
Fluoranthene by GCMS	0.000167	<0.000005	0.00167	<0.00005	-	-	-
Anthracene by GCMS	0.000113	<0.000005	0.00113	<0.00005	-	-	-
Phenanthrene by GCMS	0.00126	<0.000005	0.0126	<0.00005	-	-	-
Fluorene by GCMS	0.000143	<0.000005	0.00143	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.0000969	<0.000005	0.000969	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.00323	<0.000082	0.0323	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	16-Oct-2019
pH (pH Units)	12.85
Conductivity (µS/cm)	7,880.00
Temperature (°C)	17.70
Volume Leachant (Litres)	0.885

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	191012-76	**Client Reference:**		**Report Number:**	527515
Location:	Llanwern	**Order Number:**	LLA681	**Superseded Report:**	527504

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.105	**Natural Moisture Content (%)**	16.3
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	86
Particle Size <4mm	>95%		

Case	
SDG	191012-76
Lab Sample Number(s)	20928369
Sampled Date	10-Oct-2019
Customer Sample Ref.	W99-01
Depth (m)	0.00 - 0.00

Eluate Analysis	**C_2** Concⁿ in 10:1 eluate (mg/l)		**A_2** 10:1 concⁿ leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	0.019	<0.01	0.19	<0.1	-	-	-
Aromatics >EC16-EC21	0.019	<0.01	0.19	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	0.038	<0.01	0.38	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	0.039	<0.01	0.39	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	16-Oct-2019
pH (pH Units)	12.85
Conductivity (µS/cm)	7,880.00
Temperature (°C)	17.70
Volume Leachant (Litres)	0.885

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	191012-76	**Client Reference:**		**Report Number:**	527515
Location:	Llanwern	**Order Number:**	LLA681	**Superseded Report:**	527504

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.098	**Natural Moisture Content (%)**	9.05
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	91.7
Particle Size <4mm	>95%		

Case	
SDG	191012-76
Lab Sample Number(s)	20928373
Sampled Date	10-Oct-2019
Customer Sample Ref.	W99-02
Depth (m)	0.00 - 0.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.0058	<0.0005	0.058	<0.005	-	-	-
Free Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.00131	<0.0003	0.0131	<0.003	-	-	-
Lead	0.000343	<0.0002	0.00343	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	0.00625	<0.001	0.0625	<0.01	-	-	-
Vanadium	0.0249	<0.001	0.249	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000194	<0.00001	0.000194	<0.0001	-	-	-
Acenaphthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000355	<0.000005	0.000355	<0.00005	-	-	-
Anthracene by GCMS	0.0000123	<0.000005	0.000123	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000593	<0.000005	0.000593	<0.00005	-	-	-
Fluorene by GCMS	0.0000132	<0.000005	0.000132	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.0000227	<0.000005	0.000227	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.000162	<0.000082	0.00162	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	15-Oct-2019
pH (pH Units)	9.53
Conductivity (µS/cm)	115.00
Temperature (°C)	17.30
Volume Leachant (Litres)	0.892

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	191012-76	**Client Reference:**		**Report Number:**	527515
Location:	Llanwern	**Order Number:**	LLA681	**Superseded Report:**	527504

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.098	**Natural Moisture Content (%)**	9.05
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	91.7
Particle Size <4mm	>95%		

Case	
SDG	191012-76
Lab Sample Number(s)	20928373
Sampled Date	10-Oct-2019
Customer Sample Ref.	W99-02
Depth (m)	0.00 - 0.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	15-Oct-2019
pH (pH Units)	9.53
Conductivity (µS/cm)	115.00
Temperature (°C)	17.30
Volume Leachant (Litres)	0.892

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	191012-76	**Client Reference:**		**Report Number:**	527515
Location:	Llanwern	**Order Number:**	LLA681	**Superseded Report:**	527504

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.101	**Natural Moisture Content (%)**	12.4
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	89
Particle Size <4mm	>95%		

Case	
SDG	191012-76
Lab Sample Number(s)	20928378
Sampled Date	10-Oct-2019
Customer Sample Ref.	W99-03
Depth (m)	0.00 - 0.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00051	<0.0005	0.0051	<0.005	-	-	-
Free Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.0109	<0.001	0.109	<0.01	-	-	-
Copper	0.0142	<0.0003	0.142	<0.003	-	-	-
Lead	0.00478	<0.0002	0.0478	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.00248	<0.0004	0.0248	<0.004	-	-	-
Selenium	0.00125	<0.001	0.0125	<0.01	-	-	-
Vanadium	<0.001	<0.001	<0.01	<0.01	-	-	-
Zinc	0.0072	<0.001	0.072	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000932	<0.00001	0.000932	<0.0001	-	-	-
Acenaphthene by GCMS	0.0000458	<0.000005	0.000458	<0.00005	-	-	-
Acenaphthylene by GCMS	0.0000205	<0.000005	0.000205	<0.00005	-	-	-
Fluoranthene by GCMS	0.000133	<0.000005	0.00133	<0.00005	-	-	-
Anthracene by GCMS	0.0000275	<0.000005	0.000275	<0.00005	-	-	-
Phenanthrene by GCMS	0.000197	<0.000005	0.00197	<0.00005	-	-	-
Fluorene by GCMS	0.0000158	<0.000005	0.000158	<0.00005	-	-	-
Chrysene by GCMS	0.000011	<0.000005	0.00011	<0.00005	-	-	-
Pyrene by GCMS	0.000108	<0.000005	0.00108	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.0000138	<0.000005	0.000138	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.000666	<0.000082	0.00666	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	14-Oct-2019
pH (pH Units)	12.49
Conductivity (µS/cm)	3,050.00
Temperature (°C)	17.10
Volume Leachant (Litres)	0.889

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	191012-76	**Client Reference:**		**Report Number:**	527515
Location:	Llanwern	**Order Number:**	LLA681	**Superseded Report:**	527504

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.101	**Natural Moisture Content (%)**	12.4
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	89
Particle Size <4mm	>95%		

Case	
SDG	191012-76
Lab Sample Number(s)	20928378
Sampled Date	10-Oct-2019
Customer Sample Ref.	W99-03
Depth (m)	0.00 - 0.00

Eluate Analysis	**C_2** Concⁿ in 10:1 eluate (mg/l)		**A_2** 10:1 concⁿ leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	14-Oct-2019
pH (pH Units)	12.49
Conductivity (µS/cm)	3,050.00
Temperature (°C)	17.10
Volume Leachant (Litres)	0.889

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	191012-76	**Client Reference:**		**Report Number:**	527515
Location:	Llanwern	**Order Number:**	LLA681	**Superseded Report:**	527504

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.100	**Natural Moisture Content (%)**	10.4
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	90.6
Particle Size <4mm	>95%		

Case	
SDG	191012-76
Lab Sample Number(s)	20928385
Sampled Date	10-Oct-2019
Customer Sample Ref.	W99-04
Depth (m)	0.00 - 0.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	0.0000133	<0.00001	0.000133	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00065	<0.0005	0.0065	<0.005	-	-	-
Free Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.0151	<0.001	0.151	<0.01	-	-	-
Copper	0.0071	<0.0003	0.071	<0.003	-	-	-
Lead	0.00316	<0.0002	0.0316	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.00122	<0.0004	0.0122	<0.004	-	-	-
Selenium	0.00129	<0.001	0.0129	<0.01	-	-	-
Vanadium	<0.001	<0.001	<0.01	<0.01	-	-	-
Zinc	0.0148	<0.001	0.148	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000743	<0.00001	0.000743	<0.0001	-	-	-
Acenaphthene by GCMS	0.0000536	<0.000005	0.000536	<0.00005	-	-	-
Acenaphthylene by GCMS	0.0000116	<0.000005	0.000116	<0.00005	-	-	-
Fluoranthene by GCMS	0.000116	<0.000005	0.00116	<0.00005	-	-	-
Anthracene by GCMS	0.0000294	<0.000005	0.000294	<0.00005	-	-	-
Phenanthrene by GCMS	0.000155	<0.000005	0.00155	<0.00005	-	-	-
Fluorene by GCMS	0.0000116	<0.000005	0.000116	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.0000982	<0.000005	0.000982	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.000549	<0.000082	0.00549	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	15-Oct-2019
pH (pH Units)	12.47
Conductivity (µS/cm)	2,480.00
Temperature (°C)	17.80
Volume Leachant (Litres)	0.891

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	191012-76	**Client Reference:**		**Report Number:**	527515
Location:	Llanwern	**Order Number:**	LLA681	**Superseded Report:**	527504

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.100	**Natural Moisture Content (%)**	10.4
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	90.6
Particle Size <4mm	>95%		

Case	
SDG	191012-76
Lab Sample Number(s)	20928385
Sampled Date	10-Oct-2019
Customer Sample Ref.	W99-04
Depth (m)	0.00 - 0.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	15-Oct-2019
pH (pH Units)	12.47
Conductivity (µS/cm)	2,480.00
Temperature (°C)	17.80
Volume Leachant (Litres)	0.891

Mcerts Certification does not apply to leachates

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Validated

CERTIFICATE OF ANALYSIS

SDG:	191012-76	**Client Reference:**		**Report Number:**	527515
Location:	Llanwern	**Order Number:**	LLA681	**Superseded Report:**	527504

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.098	**Natural Moisture Content (%)**	9.05
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	91.7
Particle Size <4mm	>95%		

Case	
SDG	191012-76
Lab Sample Number(s)	20928390
Sampled Date	10-Oct-2019
Customer Sample Ref.	W99-05
Depth (m)	0.00 - 0.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.000526	<0.0005	0.00526	<0.005	-	-	-
Free Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.0153	<0.001	0.153	<0.01	-	-	-
Copper	0.00843	<0.0003	0.0843	<0.003	-	-	-
Lead	0.000433	<0.0002	0.00433	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.00159	<0.0004	0.0159	<0.004	-	-	-
Selenium	0.00206	<0.001	0.0206	<0.01	-	-	-
Vanadium	0.00959	<0.001	0.0959	<0.01	-	-	-
Zinc	0.00263	<0.001	0.0263	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000469	<0.00001	0.000469	<0.0001	-	-	-
Acenaphthene by GCMS	0.000304	<0.000005	0.00304	<0.00005	-	-	-
Acenaphthylene by GCMS	0.0000131	<0.000005	0.000131	<0.00005	-	-	-
Fluoranthene by GCMS	0.000135	<0.000005	0.00135	<0.00005	-	-	-
Anthracene by GCMS	0.0000202	<0.000005	0.000202	<0.00005	-	-	-
Phenanthrene by GCMS	0.00013	<0.000005	0.0013	<0.00005	-	-	-
Fluorene by GCMS	0.0000145	<0.000005	0.000145	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.000113	<0.000005	0.00113	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.000776	<0.000082	0.00776	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	15-Oct-2019
pH (pH Units)	11.93
Conductivity (µS/cm)	860.00
Temperature (°C)	16.90
Volume Leachant (Litres)	0.892

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	191012-76	**Client Reference:**		**Report Number:**	527515
Location:	Llanwern	**Order Number:**	LLA681	**Superseded Report:**	527504

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.098	**Natural Moisture Content (%)**	9.05
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	91.7
Particle Size <4mm	>95%		

Case	
SDG	191012-76
Lab Sample Number(s)	20928390
Sampled Date	10-Oct-2019
Customer Sample Ref.	W99-05
Depth (m)	0.00 - 0.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	15-Oct-2019
pH (pH Units)	11.93
Conductivity (µS/cm)	860.00
Temperature (°C)	16.90
Volume Leachant (Litres)	0.892

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	191012-76	**Client Reference:**		**Report Number:**	527515
Location:	Llanwern	**Order Number:**	LLA681	**Superseded Report:**	527504

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.105	**Natural Moisture Content (%)**	16.3
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	86
Particle Size <4mm	>95%		

Case	
SDG	191012-76
Lab Sample Number(s)	20928394
Sampled Date	10-Oct-2019
Customer Sample Ref.	W100-01
Depth (m)	0.00 - 0.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.000897	<0.0005	0.00897	<0.005	-	-	-
Free Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.015	<0.0003	0.15	<0.003	-	-	-
Lead	0.126	<0.0002	1.26	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.00385	<0.0004	0.0385	<0.004	-	-	-
Selenium	0.00166	<0.001	0.0166	<0.01	-	-	-
Vanadium	<0.001	<0.001	<0.01	<0.01	-	-	-
Zinc	0.0151	<0.001	0.151	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000893	<0.00001	0.000893	<0.0001	-	-	-
Acenaphthene by GCMS	0.0000739	<0.000005	0.000739	<0.00005	-	-	-
Acenaphthylene by GCMS	0.0000121	<0.000005	0.000121	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000782	<0.000005	0.000782	<0.00005	-	-	-
Anthracene by GCMS	0.000031	<0.000005	0.00031	<0.00005	-	-	-
Phenanthrene by GCMS	0.000231	<0.000005	0.00231	<0.00005	-	-	-
Fluorene by GCMS	0.0000257	<0.000005	0.000257	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.0000596	<0.000005	0.000596	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.000601	<0.000082	0.00601	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	14-Oct-2019
pH (pH Units)	12.92
Conductivity (µS/cm)	8,110.00
Temperature (°C)	17.60
Volume Leachant (Litres)	0.885

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	191012-76	**Client Reference:**		**Report Number:**	527515
Location:	Llanwern	**Order Number:**	LLA681	**Superseded Report:**	527504

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.105	**Natural Moisture Content (%)**	16.3
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	86
Particle Size <4mm	>95%		

Case	
SDG	191012-76
Lab Sample Number(s)	20928394
Sampled Date	10-Oct-2019
Customer Sample Ref.	W100-01
Depth (m)	0.00 - 0.00

Eluate Analysis	**C_2** Concⁿ in 10:1 eluate (mg/l)		**A_2** 10:1 concⁿ leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	14-Oct-2019
pH (pH Units)	12.92
Conductivity (µS/cm)	8,110.00
Temperature (°C)	17.60
Volume Leachant (Litres)	0.885

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	191012-76	**Client Reference:**		**Report Number:**	527515
Location:	Llanwern	**Order Number:**	LLA681	**Superseded Report:**	527504

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.099	**Natural Moisture Content (%)**	9.41
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	91.4
Particle Size <4mm	>95%		

Case	
SDG	191012-76
Lab Sample Number(s)	20928399
Sampled Date	10-Oct-2019
Customer Sample Ref.	W94-03
Depth (m)	0.00 - 0.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	0.0000107	<0.00001	0.000107	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.000531	<0.0005	0.00531	<0.005	-	-	-
Free Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00907	<0.001	0.0907	<0.01	-	-	-
Copper	0.00204	<0.0003	0.0204	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.000485	<0.0004	0.00485	<0.004	-	-	-
Selenium	0.00152	<0.001	0.0152	<0.01	-	-	-
Vanadium	0.0114	<0.001	0.114	<0.01	-	-	-
Zinc	0.00214	<0.001	0.0214	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000739	<0.00001	0.000739	<0.0001	-	-	-
Acenaphthene by GCMS	0.000022	<0.000005	0.00022	<0.00005	-	-	-
Acenaphthylene by GCMS	0.00000936	<0.000005	0.0000936	<0.00005	-	-	-
Fluoranthene by GCMS	0.000833	<0.000005	0.00833	<0.00005	-	-	-
Anthracene by GCMS	0.000101	<0.000005	0.00101	<0.00005	-	-	-
Phenanthrene by GCMS	0.00034	<0.000005	0.0034	<0.00005	-	-	-
Fluorene by GCMS	0.0000292	<0.000005	0.000292	<0.00005	-	-	-
Chrysene by GCMS	0.000056	<0.000005	0.00056	<0.00005	-	-	-
Pyrene by GCMS	0.000615	<0.000005	0.00615	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.0000429	<0.000005	0.000429	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.000011	<0.000005	0.00011	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.00213	<0.000082	0.0213	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	14-Oct-2019
pH (pH Units)	12.16
Conductivity (µS/cm)	1,290.00
Temperature (°C)	17.70
Volume Leachant (Litres)	0.892

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	191012-76	**Client Reference:**		**Report Number:**	527515
Location:	Llanwern	**Order Number:**	LLA681	**Superseded Report:**	527504

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.099	**Natural Moisture Content (%)**	9.41
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	91.4
Particle Size <4mm	>95%		

Case	
SDG	191012-76
Lab Sample Number(s)	20928399
Sampled Date	10-Oct-2019
Customer Sample Ref.	W94-03
Depth (m)	0.00 - 0.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	0.01	<0.01	0.1	<0.1	-	-	-
Aromatics >EC16-EC21	0.028	<0.01	0.28	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	0.038	<0.01	0.38	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	0.038	<0.01	0.38	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	14-Oct-2019
pH (pH Units)	12.16
Conductivity (µS/cm)	1,290.00
Temperature (°C)	17.70
Volume Leachant (Litres)	0.892

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	191012-76	**Client Reference:**		**Report Number:**	527515
Location:	Llanwern	**Order Number:**	LLA681	**Superseded Report:**	527504

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.100	**Natural Moisture Content (%)**	11.1
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	90
Particle Size <4mm	>95%		

Case	
SDG	191012-76
Lab Sample Number(s)	20928405
Sampled Date	10-Oct-2019
Customer Sample Ref.	W100-02
Depth (m)	0.00 - 0.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	0.0000193	<0.00001	0.000193	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00173	<0.0005	0.0173	<0.005	-	-	-
Free Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00341	<0.001	0.0341	<0.01	-	-	-
Copper	0.00817	<0.0003	0.0817	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.00294	<0.0004	0.0294	<0.004	-	-	-
Selenium	0.00397	<0.001	0.0397	<0.01	-	-	-
Vanadium	0.0548	<0.001	0.548	<0.01	-	-	-
Zinc	0.00654	<0.001	0.0654	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000207	<0.00001	0.000207	<0.0001	-	-	-
Acenaphthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000327	<0.000005	0.000327	<0.00005	-	-	-
Anthracene by GCMS	0.0000109	<0.000005	0.000109	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000501	<0.000005	0.000501	<0.00005	-	-	-
Fluorene by GCMS	0.00000673	<0.000005	0.0000673	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.000025	<0.000005	0.00025	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.000146	<0.000082	0.00146	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	14-Oct-2019
pH (pH Units)	11.54
Conductivity (µS/cm)	517.00
Temperature (°C)	17.30
Volume Leachant (Litres)	0.890

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	191012-76	**Client Reference:**		**Report Number:**	527515
Location:	Llanwern	**Order Number:**	LLA681	**Superseded Report:**	527504

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.100	**Natural Moisture Content (%)**	11.1
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	90
Particle Size <4mm	>95%		

Case	
SDG	191012-76
Lab Sample Number(s)	20928405
Sampled Date	10-Oct-2019
Customer Sample Ref.	W100-02
Depth (m)	0.00 - 0.00

Eluate Analysis	**C_2** Concⁿ in 10:1 eluate (mg/l)		**A_2** 10:1 concⁿ leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	14-Oct-2019
pH (pH Units)	11.54
Conductivity (µS/cm)	517.00
Temperature (°C)	17.30
Volume Leachant (Litres)	0.890

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	191012-76	**Client Reference:**		**Report Number:**	527515
Location:	Llanwern	**Order Number:**	LLA681	**Superseded Report:**	527504

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.101	**Natural Moisture Content (%)**	12.4
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	89
Particle Size <4mm	>95%		

Case	
SDG	191012-76
Lab Sample Number(s)	20928412
Sampled Date	10-Oct-2019
Customer Sample Ref.	W100-03
Depth (m)	0.00 - 0.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	0.0000318	<0.00001	0.000318	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.000649	<0.0005	0.00649	<0.005	-	-	-
Free Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00723	<0.001	0.0723	<0.01	-	-	-
Copper	0.00706	<0.0003	0.0706	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.00131	<0.0004	0.0131	<0.004	-	-	-
Selenium	0.00395	<0.001	0.0395	<0.01	-	-	-
Vanadium	0.0328	<0.001	0.328	<0.01	-	-	-
Zinc	0.00167	<0.001	0.0167	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.000147	<0.00001	0.00147	<0.0001	-	-	-
Acenaphthene by GCMS	0.0000809	<0.000005	0.000809	<0.00005	-	-	-
Acenaphthylene by GCMS	0.0000216	<0.000005	0.000216	<0.00005	-	-	-
Fluoranthene by GCMS	0.000694	<0.000005	0.00694	<0.00005	-	-	-
Anthracene by GCMS	0.000122	<0.000005	0.00122	<0.00005	-	-	-
Phenanthrene by GCMS	0.000501	<0.000005	0.00501	<0.00005	-	-	-
Fluorene by GCMS	0.0000752	<0.000005	0.000752	<0.00005	-	-	-
Chrysene by GCMS	0.0000386	<0.000005	0.000386	<0.00005	-	-	-
Pyrene by GCMS	0.000552	<0.000005	0.00552	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.0000232	<0.000005	0.000232	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.00226	<0.000082	0.0226	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	15-Oct-2019
pH (pH Units)	11.91
Conductivity (µS/cm)	779.00
Temperature (°C)	17.90
Volume Leachant (Litres)	0.889

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	191012-76	**Client Reference:**		**Report Number:**	527515
Location:	Llanwern	**Order Number:**	LLA681	**Superseded Report:**	527504

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.101	**Natural Moisture Content (%)**	12.4
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	89
Particle Size <4mm	>95%		

Case	
SDG	191012-76
Lab Sample Number(s)	20928412
Sampled Date	10-Oct-2019
Customer Sample Ref.	W100-03
Depth (m)	0.00 - 0.00

Eluate Analysis	**C_2** Concⁿ in 10:1 eluate (mg/l)		**A_2** 10:1 concⁿ leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	0.051	<0.01	0.51	<0.1	-	-	-
Aromatics >EC16-EC21	0.059	<0.01	0.59	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	0.11	<0.01	1.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	0.131	<0.01	1.31	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	15-Oct-2019
pH (pH Units)	11.91
Conductivity (µS/cm)	779.00
Temperature (°C)	17.90
Volume Leachant (Litres)	0.889

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	191012-76	**Client Reference:**		**Report Number:**	527515
Location:	Llanwern	**Order Number:**	LLA681	**Superseded Report:**	527504

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.100	**Natural Moisture Content (%)**	11.1
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	90
Particle Size <4mm	>95%		

Case	
SDG	191012-76
Lab Sample Number(s)	20928417
Sampled Date	10-Oct-2019
Customer Sample Ref.	W100-04
Depth (m)	0.00 - 0.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	0.0000143	<0.00001	0.000143	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00225	<0.0005	0.0225	<0.005	-	-	-
Free Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00196	<0.001	0.0196	<0.01	-	-	-
Copper	0.00311	<0.0003	0.0311	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	0.00532	<0.001	0.0532	<0.01	-	-	-
Vanadium	0.141	<0.001	1.41	<0.01	-	-	-
Zinc	0.00114	<0.001	0.0114	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000328	<0.00001	0.000328	<0.0001	-	-	-
Acenaphthene by GCMS	0.0000409	<0.000005	0.000409	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000701	<0.000005	0.000701	<0.00005	-	-	-
Anthracene by GCMS	0.0000155	<0.000005	0.000155	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000711	<0.000005	0.000711	<0.00005	-	-	-
Fluorene by GCMS	0.0000146	<0.000005	0.000146	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.0000725	<0.000005	0.000725	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.000317	<0.000082	0.00317	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	14-Oct-2019
pH (pH Units)	10.86
Conductivity (µS/cm)	247.00
Temperature (°C)	17.10
Volume Leachant (Litres)	0.890

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	191012-76	**Client Reference:**		**Report Number:**	527515
Location:	Llanwern	**Order Number:**	LLA681	**Superseded Report:**	527504

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.100	**Natural Moisture Content (%)**	11.1
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	90
Particle Size <4mm	>95%		

Case	
SDG	191012-76
Lab Sample Number(s)	20928417
Sampled Date	10-Oct-2019
Customer Sample Ref.	W100-04
Depth (m)	0.00 - 0.00

Eluate Analysis	**C_2** Concⁿ in 10:1 eluate (mg/l)		**A_2** 10:1 concⁿ leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	14-Oct-2019
pH (pH Units)	10.86
Conductivity (µS/cm)	247.00
Temperature (°C)	17.10
Volume Leachant (Litres)	0.890

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	191012-76	**Client Reference:**		**Report Number:**	527515
Location:	Llanwern	**Order Number:**	LLA681	**Superseded Report:**	527504

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.102	**Natural Moisture Content (%)**	13.6
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	88
Particle Size <4mm	>95%		

Case	
SDG	191012-76
Lab Sample Number(s)	20928421
Sampled Date	10-Oct-2019
Customer Sample Ref.	W101-01
Depth (m)	0.00 - 0.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.000697	<0.0005	0.00697	<0.005	-	-	-
Free Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.0124	<0.001	0.124	<0.01	-	-	-
Copper	0.017	<0.0003	0.17	<0.003	-	-	-
Lead	0.00351	<0.0002	0.0351	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.00457	<0.0004	0.0457	<0.004	-	-	-
Selenium	0.00151	<0.001	0.0151	<0.01	-	-	-
Vanadium	<0.001	<0.001	<0.01	<0.01	-	-	-
Zinc	0.00558	<0.001	0.0558	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.000031	<0.00001	0.00031	<0.0001	-	-	-
Acenaphthene by GCMS	0.0000526	<0.000005	0.000526	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000629	<0.000005	0.000629	<0.00005	-	-	-
Anthracene by GCMS	0.0000261	<0.000005	0.000261	<0.00005	-	-	-
Phenanthrene by GCMS	0.000136	<0.000005	0.00136	<0.00005	-	-	-
Fluorene by GCMS	0.0000175	<0.000005	0.000175	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.0000443	<0.000005	0.000443	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.00037	<0.000082	0.0037	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	15-Oct-2019
pH (pH Units)	12.76
Conductivity (µS/cm)	7,150.00
Temperature (°C)	17.00
Volume Leachant (Litres)	0.888

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	191012-76	**Client Reference:**		**Report Number:**	527515
Location:	Llanwern	**Order Number:**	LLA681	**Superseded Report:**	527504

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.102	**Natural Moisture Content (%)**	13.6
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	88
Particle Size <4mm	>95%		

Case	
SDG	191012-76
Lab Sample Number(s)	20928421
Sampled Date	10-Oct-2019
Customer Sample Ref.	W101-01
Depth (m)	0.00 - 0.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	15-Oct-2019
pH (pH Units)	12.76
Conductivity (µS/cm)	7,150.00
Temperature (°C)	17.00
Volume Leachant (Litres)	0.888

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	191012-76	**Client Reference:**		**Report Number:**	527515
Location:	Llanwern	**Order Number:**	LLA681	**Superseded Report:**	527504

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.099	**Natural Moisture Content (%)**	10
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	90.9
Particle Size <4mm	>95%		

Case	
SDG	191012-76
Lab Sample Number(s)	20928430
Sampled Date	10-Oct-2019
Customer Sample Ref.	W101-02
Depth (m)	0.00 - 0.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	0.0000138	<0.00001	0.000138	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.000753	<0.0005	0.00753	<0.005	-	-	-
Free Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00801	<0.001	0.0801	<0.01	-	-	-
Copper	0.00991	<0.0003	0.0991	<0.003	-	-	-
Lead	0.000433	<0.0002	0.00433	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.00249	<0.0004	0.0249	<0.004	-	-	-
Selenium	0.00209	<0.001	0.0209	<0.01	-	-	-
Vanadium	0.0108	<0.001	0.108	<0.01	-	-	-
Zinc	0.00703	<0.001	0.0703	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000453	<0.00001	0.000453	<0.0001	-	-	-
Acenaphthene by GCMS	0.0000653	<0.000005	0.000653	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000855	<0.000005	0.000855	<0.00005	-	-	-
Anthracene by GCMS	0.0000124	<0.000005	0.000124	<0.00005	-	-	-
Phenanthrene by GCMS	0.000112	<0.000005	0.00112	<0.00005	-	-	-
Fluorene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.0000685	<0.000005	0.000685	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.000389	<0.000082	0.00389	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	15-Oct-2019
pH (pH Units)	11.95
Conductivity (µS/cm)	869.00
Temperature (°C)	17.90
Volume Leachant (Litres)	0.891

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	191012-76	**Client Reference:**		**Report Number:**	527515
Location:	Llanwern	**Order Number:**	LLA681	**Superseded Report:**	527504

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.099	**Natural Moisture Content (%)**	10
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	90.9
Particle Size <4mm	>95%		

Case	
SDG	191012-76
Lab Sample Number(s)	20928430
Sampled Date	10-Oct-2019
Customer Sample Ref.	W101-02
Depth (m)	0.00 - 0.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	15-Oct-2019
pH (pH Units)	11.95
Conductivity (µS/cm)	869.00
Temperature (°C)	17.90
Volume Leachant (Litres)	0.891

Mcerts Certification does not apply to leachates

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Validated

CERTIFICATE OF ANALYSIS

SDG:	191012-76	**Client Reference:**		**Report Number:**	527515
Location:	Llanwern	**Order Number:**	LLA681	**Superseded Report:**	527504

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.103	**Natural Moisture Content (%)**	13.6
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	88
Particle Size <4mm	>95%		

Case	
SDG	191012-76
Lab Sample Number(s)	20928436
Sampled Date	10-Oct-2019
Customer Sample Ref.	W101-03
Depth (m)	0.00 - 0.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	0.0000123	<0.00001	0.000123	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00171	<0.0005	0.0171	<0.005	-	-	-
Free Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00168	<0.001	0.0168	<0.01	-	-	-
Copper	0.00457	<0.0003	0.0457	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.000545	<0.0004	0.00545	<0.004	-	-	-
Selenium	0.00303	<0.001	0.0303	<0.01	-	-	-
Vanadium	0.0982	<0.001	0.982	<0.01	-	-	-
Zinc	0.00589	<0.001	0.0589	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000335	<0.00001	0.000335	<0.0001	-	-	-
Acenaphthene by GCMS	0.0000345	<0.000005	0.000345	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.000096	<0.000005	0.00096	<0.00005	-	-	-
Anthracene by GCMS	0.000014	<0.000005	0.00014	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000666	<0.000005	0.000666	<0.00005	-	-	-
Fluorene by GCMS	0.00000918	<0.000005	0.0000918	<0.00005	-	-	-
Chrysene by GCMS	0.0000206	<0.000005	0.000206	<0.00005	-	-	-
Pyrene by GCMS	0.000158	<0.000005	0.00158	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.0000176	<0.000005	0.000176	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.00045	<0.000082	0.0045	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	15-Oct-2019
pH (pH Units)	11.43
Conductivity (µS/cm)	420.00
Temperature (°C)	17.50
Volume Leachant (Litres)	0.888

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	191012-76	**Client Reference:**		**Report Number:**	527515
Location:	Llanwern	**Order Number:**	LLA681	**Superseded Report:**	527504

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.103	**Natural Moisture Content (%)**	13.6
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	88
Particle Size <4mm	>95%		

Case	
SDG	191012-76
Lab Sample Number(s)	20928436
Sampled Date	10-Oct-2019
Customer Sample Ref.	W101-03
Depth (m)	0.00 - 0.00

Eluate Analysis	**C_2** Concⁿ in 10:1 eluate (mg/l)		**A_2** 10:1 concⁿ leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	15-Oct-2019
pH (pH Units)	11.43
Conductivity (µS/cm)	420.00
Temperature (°C)	17.50
Volume Leachant (Litres)	0.888

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	191012-76	**Client Reference:**		**Report Number:**	527515
Location:	Llanwern	**Order Number:**	LLA681	**Superseded Report:**	527504

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.114	**Natural Moisture Content (%)**	26.6
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	79
Particle Size <4mm	>95%		

Case	
SDG	191012-76
Lab Sample Number(s)	20928440
Sampled Date	11-Oct-2019
Customer Sample Ref.	W102-01
Depth (m)	0.00 - 0.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.000817	<0.0005	0.00817	<0.005	-	-	-
Free Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00213	<0.001	0.0213	<0.01	-	-	-
Copper	0.0115	<0.0003	0.115	<0.003	-	-	-
Lead	0.016	<0.0002	0.16	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.00295	<0.0004	0.0295	<0.004	-	-	-
Selenium	<0.001	<0.001	<0.01	<0.01	-	-	-
Vanadium	<0.001	<0.001	<0.01	<0.01	-	-	-
Zinc	0.012	<0.001	0.12	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000536	<0.00001	0.000536	<0.0001	-	-	-
Acenaphthene by GCMS	0.0000474	<0.000005	0.000474	<0.00005	-	-	-
Acenaphthylene by GCMS	0.00000563	<0.000005	0.0000563	<0.00005	-	-	-
Fluoranthene by GCMS	0.000109	<0.000005	0.00109	<0.00005	-	-	-
Anthracene by GCMS	0.0000485	<0.000005	0.000485	<0.00005	-	-	-
Phenanthrene by GCMS	0.000294	<0.000005	0.00294	<0.00005	-	-	-
Fluorene by GCMS	0.0000213	<0.000005	0.000213	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.0000745	<0.000005	0.000745	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.000654	<0.000082	0.00654	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	15-Oct-2019
pH (pH Units)	12.81
Conductivity (µS/cm)	7,240.00
Temperature (°C)	18.00
Volume Leachant (Litres)	0.876

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	191012-76	**Client Reference:**		**Report Number:**	527515
Location:	Llanwern	**Order Number:**	LLA681	**Superseded Report:**	527504

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.114	**Natural Moisture Content (%)**	26.6
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	79
Particle Size <4mm	>95%		

Case	
SDG	191012-76
Lab Sample Number(s)	20928440
Sampled Date	11-Oct-2019
Customer Sample Ref.	W102-01
Depth (m)	0.00 - 0.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	15-Oct-2019
pH (pH Units)	12.81
Conductivity (µS/cm)	7,240.00
Temperature (°C)	18.00
Volume Leachant (Litres)	0.876

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	191012-76	**Client Reference:**		**Report Number:**	527515
Location:	Llanwern	**Order Number:**	LLA681	**Superseded Report:**	527504

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.103	**Natural Moisture Content (%)**	14.9
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	87
Particle Size <4mm	>95%		

Case	
SDG	191012-76
Lab Sample Number(s)	20928444
Sampled Date	11-Oct-2019
Customer Sample Ref.	W102-02
Depth (m)	0.00 - 0.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	0.000023	<0.00001	0.00023	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.000868	<0.0005	0.00868	<0.005	-	-	-
Free Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.0106	<0.001	0.106	<0.01	-	-	-
Copper	0.00394	<0.0003	0.0394	<0.003	-	-	-
Lead	0.066	<0.0002	0.66	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.000966	<0.0004	0.00966	<0.004	-	-	-
Selenium	0.00107	<0.001	0.0107	<0.01	-	-	-
Vanadium	<0.001	<0.001	<0.01	<0.01	-	-	-
Zinc	0.0412	<0.001	0.412	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000227	<0.00001	0.000227	<0.0001	-	-	-
Acenaphthene by GCMS	0.00000954	<0.000005	0.0000954	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000159	<0.000005	0.000159	<0.00005	-	-	-
Anthracene by GCMS	0.00000766	<0.000005	0.0000766	<0.00005	-	-	-
Phenanthrene by GCMS	0.000034	<0.000005	0.00034	<0.00005	-	-	-
Fluorene by GCMS	0.00000965	<0.000005	0.0000965	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.0000119	<0.000005	0.000119	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.000111	<0.000082	0.00111	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	15-Oct-2019
pH (pH Units)	12.87
Conductivity (µS/cm)	7,730.00
Temperature (°C)	17.00
Volume Leachant (Litres)	0.887

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	191012-76	**Client Reference:**		**Report Number:**	527515
Location:	Llanwern	**Order Number:**	LLA681	**Superseded Report:**	527504

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.103	**Natural Moisture Content (%)**	14.9
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	87
Particle Size <4mm	>95%		

Case	
SDG	191012-76
Lab Sample Number(s)	20928444
Sampled Date	11-Oct-2019
Customer Sample Ref.	W102-02
Depth (m)	0.00 - 0.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	15-Oct-2019
pH (pH Units)	12.87
Conductivity (µS/cm)	7,730.00
Temperature (°C)	17.00
Volume Leachant (Litres)	0.887

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	191012-76	**Client Reference:**		**Report Number:**	527515
Location:	Llanwern	**Order Number:**	LLA681	**Superseded Report:**	527504

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.103	**Natural Moisture Content (%)**	14.9
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	87
Particle Size <4mm	>95%		

Case	
SDG	191012-76
Lab Sample Number(s)	20928449
Sampled Date	11-Oct-2019
Customer Sample Ref.	W102-03
Depth (m)	0.00 - 0.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	0.0000186	<0.00001	0.000186	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.000574	<0.0005	0.00574	<0.005	-	-	-
Free Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.0211	<0.001	0.211	<0.01	-	-	-
Copper	0.0028	<0.0003	0.028	<0.003	-	-	-
Lead	0.029	<0.0002	0.29	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	0.00178	<0.001	0.0178	<0.01	-	-	-
Vanadium	<0.001	<0.001	<0.01	<0.01	-	-	-
Zinc	0.017	<0.001	0.17	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000233	<0.00001	0.000233	<0.0001	-	-	-
Acenaphthene by GCMS	0.0000101	<0.000005	0.000101	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000168	<0.000005	0.000168	<0.00005	-	-	-
Anthracene by GCMS	0.00000983	<0.000005	0.0000983	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000305	<0.000005	0.000305	<0.00005	-	-	-
Fluorene by GCMS	0.0000071	<0.000005	0.000071	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.0000146	<0.000005	0.000146	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.000112	<0.000082	0.00112	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	16-Oct-2019
pH (pH Units)	12.85
Conductivity (µS/cm)	7,930.00
Temperature (°C)	17.50
Volume Leachant (Litres)	0.887

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	191012-76	**Client Reference:**		**Report Number:**	527515
Location:	Llanwern	**Order Number:**	LLA681	**Superseded Report:**	527504

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.103	**Natural Moisture Content (%)**	14.9
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	87
Particle Size <4mm	>95%		

Case	
SDG	191012-76
Lab Sample Number(s)	20928449
Sampled Date	11-Oct-2019
Customer Sample Ref.	W102-03
Depth (m)	0.00 - 0.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	16-Oct-2019
pH (pH Units)	12.85
Conductivity (µS/cm)	7,930.00
Temperature (°C)	17.50
Volume Leachant (Litres)	0.887

Mcerts Certification does not apply to leachates

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Validated

CERTIFICATE OF ANALYSIS

SDG:	191012-76	**Client Reference:**		**Report Number:**	527515
Location:	Llanwern	**Order Number:**	LLA681	**Superseded Report:**	527504

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.103	**Natural Moisture Content (%)**	14.9
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	87
Particle Size <4mm	>95%		

Case	
SDG	191012-76
Lab Sample Number(s)	20928454
Sampled Date	11-Oct-2019
Customer Sample Ref.	W103-01
Depth (m)	0.00 - 0.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.000834	<0.0005	0.00834	<0.005	-	-	-
Free Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00877	<0.001	0.0877	<0.01	-	-	-
Copper	0.00702	<0.0003	0.0702	<0.003	-	-	-
Lead	0.0273	<0.0002	0.273	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.00127	<0.0004	0.0127	<0.004	-	-	-
Selenium	<0.001	<0.001	<0.01	<0.01	-	-	-
Vanadium	<0.001	<0.001	<0.01	<0.01	-	-	-
Zinc	0.0105	<0.001	0.105	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.000138	<0.00001	0.00138	<0.0001	-	-	-
Acenaphthene by GCMS	0.0000784	<0.000005	0.000784	<0.00005	-	-	-
Acenaphthylene by GCMS	0.0000076	<0.000005	0.000076	<0.00005	-	-	-
Fluoranthene by GCMS	0.000128	<0.000005	0.00128	<0.00005	-	-	-
Anthracene by GCMS	0.0000236	<0.000005	0.000236	<0.00005	-	-	-
Phenanthrene by GCMS	0.00021	<0.000005	0.0021	<0.00005	-	-	-
Fluorene by GCMS	0.0000129	<0.000005	0.000129	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.0000838	<0.000005	0.000838	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.000683	<0.000082	0.00683	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	16-Oct-2019
pH (pH Units)	12.83
Conductivity (µS/cm)	7,770.00
Temperature (°C)	18.00
Volume Leachant (Litres)	0.887

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	191012-76	**Client Reference:**		**Report Number:**	527515
Location:	Llanwern	**Order Number:**	LLA681	**Superseded Report:**	527504

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.103	**Natural Moisture Content (%)**	14.9
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	87
Particle Size <4mm	>95%		

Case	
SDG	191012-76
Lab Sample Number(s)	20928454
Sampled Date	11-Oct-2019
Customer Sample Ref.	W103-01
Depth (m)	0.00 - 0.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	16-Oct-2019
pH (pH Units)	12.83
Conductivity (µS/cm)	7,770.00
Temperature (°C)	18.00
Volume Leachant (Litres)	0.887

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	191012-76	**Client Reference:**		**Report Number:**	527515
Location:	Llanwern	**Order Number:**	LLA681	**Superseded Report:**	527504

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.100	**Natural Moisture Content (%)**	11.1
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	90
Particle Size <4mm	>95%		

Case	
SDG	191012-76
Lab Sample Number(s)	20928458
Sampled Date	10-Oct-2019
Customer Sample Ref.	W95-01
Depth (m)	0.00 - 0.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	0.0000109	<0.00001	0.000109	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00301	<0.0005	0.0301	<0.005	-	-	-
Free Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00539	<0.001	0.0539	<0.01	-	-	-
Copper	0.00374	<0.0003	0.0374	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	0.00198	<0.001	0.0198	<0.01	-	-	-
Vanadium	0.0996	<0.001	0.996	<0.01	-	-	-
Zinc	0.00115	<0.001	0.0115	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000216	<0.00002	0.000216	<0.0002	-	-	-
Acenaphthene by GCMS	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Acenaphthylene by GCMS	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Fluoranthene by GCMS	0.0000328	<0.00001	0.000328	<0.0001	-	-	-
Anthracene by GCMS	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Phenanthrene by GCMS	0.0000264	<0.00001	0.000264	<0.0001	-	-	-
Fluorene by GCMS	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Chrysene by GCMS	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Pyrene by GCMS	0.0000559	<0.00001	0.000559	<0.0001	-	-	-
Benz(a)anthracene by GCMS	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Benzo(b)fluoranthene by GCMS	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Benzo(k)fluoranthene by GCMS	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Benzo(a)pyrene by GCMS	<0.000004	<0.000004	<0.00004	<0.00004	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Benzo(ghi)perylene by GCMS	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Indeno(123cd)pyrene by GCMS	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
PAH 16 EPA Total by GCMS	<0.000164	<0.000164	<0.00164	<0.00164	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	16-Oct-2019
pH (pH Units)	11.49
Conductivity (µS/cm)	441.00
Temperature (°C)	17.40
Volume Leachant (Litres)	0.890

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	191012-76	**Client Reference:**		**Report Number:**	527515
Location:	Llanwern	**Order Number:**	LLA681	**Superseded Report:**	527504

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.100	**Natural Moisture Content (%)**	11.1
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	90
Particle Size <4mm	>95%		

Case	
SDG	191012-76
Lab Sample Number(s)	20928458
Sampled Date	10-Oct-2019
Customer Sample Ref.	W95-01
Depth (m)	0.00 - 0.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.02	<0.02	<0.2	<0.2	-	-	-
Aliphatics >C16-C21	<0.02	<0.02	<0.2	<0.2	-	-	-
Aliphatics >C21-C35	<0.02	<0.02	<0.2	<0.2	-	-	-
Total Aliphatics >C12-C35	<0.02	<0.02	<0.2	<0.2	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.02	<0.02	<0.2	<0.2	-	-	-
Aromatics >EC16-EC21	<0.02	<0.02	<0.2	<0.2	-	-	-
Aromatics >EC21-EC35	<0.02	<0.02	<0.2	<0.2	-	-	-
Total Aromatics >EC12-EC35	<0.02	<0.02	<0.2	<0.2	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.02	<0.02	<0.2	<0.2	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.02	<0.02	<0.2	<0.2	-	-	-

Leach Test Information

Date Prepared	16-Oct-2019
pH (pH Units)	11.49
Conductivity (µS/cm)	441.00
Temperature (°C)	17.40
Volume Leachant (Litres)	0.890

Mcerts Certification does not apply to leachates

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Validated

CERTIFICATE OF ANALYSIS

SDG:	191012-76	**Client Reference:**		**Report Number:**	527515
Location:	Llanwern	**Order Number:**	LLA681	**Superseded Report:**	527504

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.117	**Natural Moisture Content (%)**	29.9
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	77
Particle Size <4mm	>95%		

Case	
SDG	191012-76
Lab Sample Number(s)	20928464
Sampled Date	11-Oct-2019
Customer Sample Ref.	W103-02
Depth (m)	0.00 - 0.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00398	<0.0005	0.0398	<0.005	-	-	-
Free Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00353	<0.001	0.0353	<0.01	-	-	-
Copper	0.0137	<0.0003	0.137	<0.003	-	-	-
Lead	0.104	<0.0002	1.04	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.00244	<0.0004	0.0244	<0.004	-	-	-
Selenium	0.00122	<0.001	0.0122	<0.01	-	-	-
Vanadium	<0.001	<0.001	<0.01	<0.01	-	-	-
Zinc	0.0162	<0.001	0.162	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000728	<0.00001	0.000728	<0.0001	-	-	-
Acenaphthene by GCMS	0.0000344	<0.000005	0.000344	<0.00005	-	-	-
Acenaphthylene by GCMS	0.00000836	<0.000005	0.0000836	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000284	<0.000005	0.000284	<0.00005	-	-	-
Anthracene by GCMS	0.0000144	<0.000005	0.000144	<0.00005	-	-	-
Phenanthrene by GCMS	0.000108	<0.000005	0.00108	<0.00005	-	-	-
Fluorene by GCMS	0.0000104	<0.000005	0.000104	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.0000201	<0.000005	0.000201	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.000297	<0.000082	0.00297	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	15-Oct-2019
pH (pH Units)	12.87
Conductivity (µS/cm)	7,730.00
Temperature (°C)	17.00
Volume Leachant (Litres)	0.873

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	191012-76	**Client Reference:**		**Report Number:**	527515
Location:	Llanwern	**Order Number:**	LLA681	**Superseded Report:**	527504

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.117	**Natural Moisture Content (%)**	29.9
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	77
Particle Size <4mm	>95%		

Case	
SDG	191012-76
Lab Sample Number(s)	20928464
Sampled Date	11-Oct-2019
Customer Sample Ref.	W103-02
Depth (m)	0.00 - 0.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	15-Oct-2019
pH (pH Units)	12.87
Conductivity (µS/cm)	7,730.00
Temperature (°C)	17.00
Volume Leachant (Litres)	0.873

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	191012-76	**Client Reference:**		**Report Number:**	527515
Location:	Llanwern	**Order Number:**	LLA681	**Superseded Report:**	527504

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.107	**Natural Moisture Content (%)**	19
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	84
Particle Size <4mm	>95%		

Case	
SDG	191012-76
Lab Sample Number(s)	20928469
Sampled Date	11-Oct-2019
Customer Sample Ref.	W103-03
Depth (m)	0.00 - 0.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00131	<0.0005	0.0131	<0.005	-	-	-
Free Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00598	<0.001	0.0598	<0.01	-	-	-
Copper	0.00115	<0.0003	0.0115	<0.003	-	-	-
Lead	0.0171	<0.0002	0.171	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	<0.001	<0.001	<0.01	<0.01	-	-	-
Vanadium	<0.001	<0.001	<0.01	<0.01	-	-	-
Zinc	0.00803	<0.001	0.0803	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000966	<0.00001	0.000966	<0.0001	-	-	-
Acenaphthene by GCMS	0.000032	<0.000005	0.00032	<0.00005	-	-	-
Acenaphthylene by GCMS	0.00000598	<0.000005	0.0000598	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000747	<0.000005	0.000747	<0.00005	-	-	-
Anthracene by GCMS	0.0000202	<0.000005	0.000202	<0.00005	-	-	-
Phenanthrene by GCMS	0.000129	<0.000005	0.00129	<0.00005	-	-	-
Fluorene by GCMS	0.0000116	<0.000005	0.000116	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.0000541	<0.000005	0.000541	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.000424	<0.000082	0.00424	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	16-Oct-2019
pH (pH Units)	12.85
Conductivity (µS/cm)	8,030.00
Temperature (°C)	17.70
Volume Leachant (Litres)	0.883

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	191012-76	**Client Reference:**		**Report Number:**	527515
Location:	Llanwern	**Order Number:**	LLA681	**Superseded Report:**	527504

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.107	**Natural Moisture Content (%)**	19
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	84
Particle Size <4mm	>95%		

Case	
SDG	191012-76
Lab Sample Number(s)	20928469
Sampled Date	11-Oct-2019
Customer Sample Ref.	W103-03
Depth (m)	0.00 - 0.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	16-Oct-2019
pH (pH Units)	12.85
Conductivity (µS/cm)	8,030.00
Temperature (°C)	17.70
Volume Leachant (Litres)	0.883

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	191012-76	**Client Reference:**		**Report Number:**	527515
Location:	Llanwern	**Order Number:**	LLA681	**Superseded Report:**	527504

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.100	**Natural Moisture Content (%)**	10.7
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	90.3
Particle Size <4mm	>95%		

Case	
SDG	191012-76
Lab Sample Number(s)	20928475
Sampled Date	10-Oct-2019
Customer Sample Ref.	W95-02
Depth (m)	0.00 - 0.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00312	<0.0005	0.0312	<0.005	-	-	-
Free Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00159	<0.001	0.0159	<0.01	-	-	-
Copper	0.00928	<0.0003	0.0928	<0.003	-	-	-
Lead	0.00302	<0.0002	0.0302	<0.002	-	-	-
Manganese	0.00753	<0.003	0.0753	<0.03	-	-	-
Nickel	0.00644	<0.0004	0.0644	<0.004	-	-	-
Selenium	0.017	<0.001	0.17	<0.01	-	-	-
Vanadium	0.00485	<0.001	0.0485	<0.01	-	-	-
Zinc	0.0121	<0.001	0.121	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.428	<0.019	4.28	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Acenaphthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Acenaphthylene by GCMS	0.00000518	<0.000005	0.0000518	<0.00005	-	-	-
Fluoranthene by GCMS	0.000173	<0.000005	0.00173	<0.00005	-	-	-
Anthracene by GCMS	0.0000124	<0.000005	0.000124	<0.00005	-	-	-
Phenanthrene by GCMS	0.000023	<0.000005	0.00023	<0.00005	-	-	-
Fluorene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.000158	<0.000005	0.00158	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.000111	<0.000005	0.00111	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.0000514	<0.000002	0.000514	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	0.0000414	<0.000005	0.000414	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	0.0000319	<0.000005	0.000319	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.000608	<0.000082	0.00608	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	16-Oct-2019
pH (pH Units)	8.92
Conductivity (µS/cm)	507.00
Temperature (°C)	17.50
Volume Leachant (Litres)	0.890

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	191012-76	**Client Reference:**		**Report Number:**	527515
Location:	Llanwern	**Order Number:**	LLA681	**Superseded Report:**	527504

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.100	**Natural Moisture Content (%)**	10.7
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	90.3
Particle Size <4mm	>95%		

Case	
SDG	191012-76
Lab Sample Number(s)	20928475
Sampled Date	10-Oct-2019
Customer Sample Ref.	W95-02
Depth (m)	0.00 - 0.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	0.036	<0.01	0.36	<0.1	-	-	-
Total Aliphatics >C12-C35	0.036	<0.01	0.36	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	0.036	<0.01	0.36	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	0.036	<0.01	0.36	<0.1	-	-	-

Leach Test Information

Date Prepared	16-Oct-2019
pH (pH Units)	8.92
Conductivity (µS/cm)	507.00
Temperature (°C)	17.50
Volume Leachant (Litres)	0.890

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	191012-76	**Client Reference:**		**Report Number:**	527515
Location:	Llanwern	**Order Number:**	LLA681	**Superseded Report:**	527504

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.100	**Natural Moisture Content (%)**	10.5
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	90.5
Particle Size <4mm	>95%		

Case	
SDG	191012-76
Lab Sample Number(s)	20928484
Sampled Date	10-Oct-2019
Customer Sample Ref.	W95-03
Depth (m)	0.00 - 0.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	0.000013	<0.00001	0.00013	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	<0.0005	<0.0005	<0.005	<0.005	-	-	-
Free Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.0159	<0.001	0.159	<0.01	-	-	-
Copper	0.0012	<0.0003	0.012	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	0.00114	<0.001	0.0114	<0.01	-	-	-
Vanadium	0.0254	<0.001	0.254	<0.01	-	-	-
Zinc	0.0017	<0.001	0.017	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000904	<0.00001	0.000904	<0.0001	-	-	-
Acenaphthene by GCMS	0.0000241	<0.000005	0.000241	<0.00005	-	-	-
Acenaphthylene by GCMS	0.0000189	<0.000005	0.000189	<0.00005	-	-	-
Fluoranthene by GCMS	0.000268	<0.000005	0.00268	<0.00005	-	-	-
Anthracene by GCMS	0.0000484	<0.000005	0.000484	<0.00005	-	-	-
Phenanthrene by GCMS	0.000136	<0.000005	0.00136	<0.00005	-	-	-
Fluorene by GCMS	0.0000198	<0.000005	0.000198	<0.00005	-	-	-
Chrysene by GCMS	0.0000344	<0.000005	0.000344	<0.00005	-	-	-
Pyrene by GCMS	0.000425	<0.000005	0.00425	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.0000273	<0.000005	0.000273	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.00000901	<0.000005	0.0000901	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.00000412	<0.000002	0.0000412	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.00111	<0.000082	0.0111	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	16-Oct-2019
pH (pH Units)	11.91
Conductivity (µS/cm)	878.00
Temperature (°C)	17.50
Volume Leachant (Litres)	0.891

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	191012-76	**Client Reference:**		**Report Number:**	527515
Location:	Llanwern	**Order Number:**	LLA681	**Superseded Report:**	527504

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.100	**Natural Moisture Content (%)**	10.5
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	90.5
Particle Size <4mm	>95%		

Case	
SDG	191012-76
Lab Sample Number(s)	20928484
Sampled Date	10-Oct-2019
Customer Sample Ref.	W95-03
Depth (m)	0.00 - 0.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	16-Oct-2019
pH (pH Units)	11.91
Conductivity (µS/cm)	878.00
Temperature (°C)	17.50
Volume Leachant (Litres)	0.891

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	191012-76	**Client Reference:**		**Report Number:**	527515
Location:	Llanwern	**Order Number:**	LLA681	**Superseded Report:**	527504

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.102	**Natural Moisture Content (%)**	12.4
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	89
Particle Size <4mm	>95%		

Case	
SDG	191012-76
Lab Sample Number(s)	20928492
Sampled Date	10-Oct-2019
Customer Sample Ref.	W95-04
Depth (m)	0.00 - 0.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	0.0000165	<0.00001	0.000165	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.000891	<0.0005	0.00891	<0.005	-	-	-
Free Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00575	<0.001	0.0575	<0.01	-	-	-
Copper	0.00459	<0.0003	0.0459	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	0.00195	<0.001	0.0195	<0.01	-	-	-
Vanadium	0.129	<0.001	1.29	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000205	<0.00001	0.000205	<0.0001	-	-	-
Acenaphthene by GCMS	0.0000147	<0.000005	0.000147	<0.00005	-	-	-
Acenaphthylene by GCMS	0.00000691	<0.000005	0.0000691	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000895	<0.000005	0.000895	<0.00005	-	-	-
Anthracene by GCMS	0.0000169	<0.000005	0.000169	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000319	<0.000005	0.000319	<0.00005	-	-	-
Fluorene by GCMS	0.0000086	<0.000005	0.000086	<0.00005	-	-	-
Chrysene by GCMS	0.0000105	<0.000005	0.000105	<0.00005	-	-	-
Pyrene by GCMS	0.000142	<0.000005	0.00142	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.0000106	<0.000005	0.000106	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.000352	<0.000082	0.00352	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	16-Oct-2019
pH (pH Units)	11.30
Conductivity (µS/cm)	399.00
Temperature (°C)	17.70
Volume Leachant (Litres)	0.889

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	191012-76	**Client Reference:**		**Report Number:**	527515
Location:	Llanwern	**Order Number:**	LLA681	**Superseded Report:**	527504

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.102	**Natural Moisture Content (%)**	12.4
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	89
Particle Size <4mm	>95%		

Case	
SDG	191012-76
Lab Sample Number(s)	20928492
Sampled Date	10-Oct-2019
Customer Sample Ref.	W95-04
Depth (m)	0.00 - 0.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	16-Oct-2019
pH (pH Units)	11.30
Conductivity (µS/cm)	399.00
Temperature (°C)	17.70
Volume Leachant (Litres)	0.889

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	191012-76	**Client Reference:**		**Report Number:**	527515
Location:	Llanwern	**Order Number:**	LLA681	**Superseded Report:**	527504

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.100	**Natural Moisture Content (%)**	10.9
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	90.2
Particle Size <4mm	>95%		

Case	
SDG	191012-76
Lab Sample Number(s)	20928497
Sampled Date	10-Oct-2019
Customer Sample Ref.	W96-01
Depth (m)	0.00 - 0.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	0.0000101	<0.00001	0.000101	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00573	<0.0005	0.0573	<0.005	-	-	-
Free Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00236	<0.001	0.0236	<0.01	-	-	-
Copper	0.00546	<0.0003	0.0546	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.000515	<0.0004	0.00515	<0.004	-	-	-
Selenium	0.00197	<0.001	0.0197	<0.01	-	-	-
Vanadium	0.0697	<0.001	0.697	<0.01	-	-	-
Zinc	0.00207	<0.001	0.0207	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.00002	<0.00001	0.0002	<0.0001	-	-	-
Acenaphthene by GCMS	0.0000141	<0.000005	0.000141	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000442	<0.000005	0.000442	<0.00005	-	-	-
Anthracene by GCMS	0.00000678	<0.000005	0.0000678	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000325	<0.000005	0.000325	<0.00005	-	-	-
Fluorene by GCMS	0.00000695	<0.000005	0.0000695	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.0000451	<0.000005	0.000451	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.00017	<0.000082	0.0017	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	16-Oct-2019
pH (pH Units)	11.36
Conductivity (µS/cm)	355.00
Temperature (°C)	17.90
Volume Leachant (Litres)	0.890

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	191012-76	**Client Reference:**		**Report Number:**	527515
Location:	Llanwern	**Order Number:**	LLA681	**Superseded Report:**	527504

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.100	**Natural Moisture Content (%)**	10.9
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	90.2
Particle Size <4mm	>95%		

Case	
SDG	191012-76
Lab Sample Number(s)	20928497
Sampled Date	10-Oct-2019
Customer Sample Ref.	W96-01
Depth (m)	0.00 - 0.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	16-Oct-2019
pH (pH Units)	11.36
Conductivity (µS/cm)	355.00
Temperature (°C)	17.90
Volume Leachant (Litres)	0.890

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	191012-76	**Client Reference:**		**Report Number:**	527515
Location:	Llanwern	**Order Number:**	LLA681	**Superseded Report:**	527504

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.103	**Natural Moisture Content (%)**	13.6
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	88
Particle Size <4mm	>95%		

Case	
SDG	191012-76
Lab Sample Number(s)	20928504
Sampled Date	10-Oct-2019
Customer Sample Ref.	W96-02
Depth (m)	0.00 - 0.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	0.0000109	<0.00001	0.000109	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00624	<0.0005	0.0624	<0.005	-	-	-
Free Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00369	<0.001	0.0369	<0.01	-	-	-
Copper	0.00453	<0.0003	0.0453	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.00058	<0.0004	0.0058	<0.004	-	-	-
Selenium	0.00197	<0.001	0.0197	<0.01	-	-	-
Vanadium	0.12	<0.001	1.2	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000242	<0.00001	0.000242	<0.0001	-	-	-
Acenaphthene by GCMS	0.00000721	<0.000005	0.0000721	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000516	<0.000005	0.000516	<0.00005	-	-	-
Anthracene by GCMS	0.0000117	<0.000005	0.000117	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000463	<0.000005	0.000463	<0.00005	-	-	-
Fluorene by GCMS	0.00000883	<0.000005	0.0000883	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.0000469	<0.000005	0.000469	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.00000738	<0.000005	0.0000738	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.000204	<0.000082	0.00204	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	15-Oct-2019
pH (pH Units)	10.76
Conductivity (µS/cm)	239.00
Temperature (°C)	18.20
Volume Leachant (Litres)	0.888

Mcerts Certification does not apply to leachates
29/10/2019 16:43:08

16:42:41 29/10/2019

CERTIFICATE OF ANALYSIS

SDG:	191012-76	**Client Reference:**		**Report Number:**	527515
Location:	Llanwern	**Order Number:**	LLA681	**Superseded Report:**	527504

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.103	**Natural Moisture Content (%)**	13.6
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	88
Particle Size <4mm	>95%		

Case	
SDG	191012-76
Lab Sample Number(s)	20928504
Sampled Date	10-Oct-2019
Customer Sample Ref.	W96-02
Depth (m)	0.00 - 0.00

Eluate Analysis	**C_2** Concⁿ in 10:1 eluate (mg/l)		**A_2** 10:1 concⁿ leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	15-Oct-2019
pH (pH Units)	10.76
Conductivity (µS/cm)	239.00
Temperature (°C)	18.20
Volume Leachant (Litres)	0.888

Mcerts Certification does not apply to leachates

29/10/2019 16:43:08

16:42:41 29/10/2019

Table of Results - Appendix

Method No	Reference	Description
PM024	Modified BS 1377	Soil preparation including homogenisation, moisture screens of soils for Asbestos Containing Material
PM115		Leaching Procedure for CEN One Stage Leach Test 2:1 & 10:1 1 Step
TM024	Method 4500A & B, AWWA/APHA, 20th Ed., 1999	Determination of Exchangeable Ammonium and Ammoniacal Nitrogen as N by titration on solids
TM048	HSG 248, Asbestos: The analysts' guide for sampling, analysis and clearance procedures	Identification of Asbestos in Bulk Material
TM062 (S)	National Grid Property Holdings Methods for the Collection & Analysis of Samples from National Grid Sites version 1 Sec 3.9	Determination of Phenols in Soils by HPLC
TM089	Modified: US EPA Methods 8020 & 602	Determination of Gasoline Range Hydrocarbons (GRO) by Headspace GC-FID (C4-C12)
TM099	BS 2690: Part 7:1968 / BS 6068: Part2.11:1984	Determination of Ammonium in Water Samples using the Kone Analyser
TM116	Modified: US EPA Method 8260, 8120, 8020, 624, 610 & 602	Determination of Volatile Organic Compounds by Headspace / GC-MS
TM132	In - house Method	ELTRA CS800 Operators Guide
TM133	BS 1377: Part 3 1990;BS 6068-2.5	Determination of pH in Soil and Water using the GLpH pH Meter
TM152	Method 3125B, AWWA/APHA, 20th Ed., 1999	Analysis of Aqueous Samples by ICP-MS
TM153	Method 4500A,B,C, I, M AWWA/APHA, 20th Ed., 1999	Determination of Total Cyanide, Free (Easily Liberatable) Cyanide and Thiocyanate using the Skalar SANS+ System Segmented Flow Analyser
TM174	Analysis of Petroleum Hydrocarbons in Environmental Media – Total Petroleum Hydrocarbon Criteria	Determination of Speciated Extractable Petroleum Hydrocarbons in Waters by GC-FID
TM178	Modified: US EPA Method 8100	Determination of Polynuclear Aromatic Hydrocarbons (PAH) by GC-MS in Waters
TM181	US EPA Method 6010B	Determination of Routine Metals in Soil by iCap 6500 Duo ICP-OES
TM183	BS EN 23506:2002, (BS 6068-2.74:2002) ISBN 0 580 38924 3	Determination of Trace Level Mercury in Waters and Leachates by PSA Cold Vapour Atomic Fluorescence Spectrometry
TM218	Shaker extraction - EPA method 3546.	The determination of PAH in soil samples by GC-MS
TM227	Standard methods for the examination of waters and wastewaters 20th Edition, AWWA/APHA Method 4500.	Determination of Total Cyanide, Free (Easily Liberatable) Cyanide and Thiocyanate
TM245	By GC-FID	Determination of GRO by Headspace in waters
TM256	The measurement of Electrical Conductivity and the Laboratory determination of pH Value of Natural, Treated and Wastewaters. HMSO, 1978. ISBN 011 751428 4.	Determination of pH in Water and Leachate using the GLpH pH Meter
TM304	HSE Contract research Report no 83/1996	Asbestos Quantification in Soil: Fibres identified by morphology only
TM414	Analysis of Petroleum Hydrocarbons in Environmental Media – Total Petroleum Hydrocarbon Criteria	Determination of Speciated Extractable Petroleum Hydrocarbons in Soils by GCxGC-FID

NA = not applicable.

Chemical testing (unless subcontracted) performed at ALS Life Sciences Ltd Hawarden (Method codes TM) or ALS Life Sciences Ltd Aberdeen (Method codes S).

CERTIFICATE OF ANALYSIS

SDG:	191012-76	**Client Reference:**		**Report Number:**	527515
Location:	Llanwern	**Order Number:**	LLA681	**Superseded Report:**	527504

Test Completion Dates

Lab Sample No(s)	20928248	20928340	20928399	20928458	20928475	20928484	20928492	20928497	20928504	20928253
Customer Sample Ref.	W94-01	W94-02	W94-03	W95-01	W95-02	W95-03	W95-04	W96-01	W96-02	W96-03
AGS Ref.										
Depth	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
Ammoniacal Nitrogen	23-Oct-2019	23-Oct-2019	23-Oct-2019	21-Oct-2019	24-Oct-2019	21-Oct-2019	23-Oct-2019	23-Oct-2019	23-Oct-2019	23-Oct-2019
Ammonium Soil by Titration	22-Oct-2019	22-Oct-2019	22-Oct-2019	22-Oct-2019	22-Oct-2019	22-Oct-2019	22-Oct-2019	25-Oct-2019	22-Oct-2019	25-Oct-2019
Asbestos ID in Solid Samples	24-Oct-2019		24-Oct-2019	24-Oct-2019		24-Oct-2019		24-Oct-2019		24-Oct-2019
CEN 10:1 Leachate (1 Stage)	16-Oct-2019	16-Oct-2019	16-Oct-2019	16-Oct-2019	16-Oct-2019	16-Oct-2019	16-Oct-2019	17-Oct-2019	17-Oct-2019	17-Oct-2019
CEN Readings	21-Oct-2019	21-Oct-2019	21-Oct-2019	18-Oct-2019	19-Oct-2019	18-Oct-2019	18-Oct-2019	21-Oct-2019	21-Oct-2019	21-Oct-2019
Cyanide Comp/Free/Total/Thiocyanate	24-Oct-2019	24-Oct-2019	24-Oct-2019	24-Oct-2019	24-Oct-2019	24-Oct-2019	24-Oct-2019	24-Oct-2019	24-Oct-2019	24-Oct-2019
Dissolved Metals by ICP-MS	24-Oct-2019	24-Oct-2019	23-Oct-2019	23-Oct-2019	24-Oct-2019	23-Oct-2019	23-Oct-2019	24-Oct-2019	24-Oct-2019	24-Oct-2019
EPH CWG (Aliphatic) Aqueous GC (W)	25-Oct-2019	25-Oct-2019	25-Oct-2019	26-Oct-2019	25-Oct-2019	26-Oct-2019	26-Oct-2019	25-Oct-2019	25-Oct-2019	25-Oct-2019
EPH CWG (Aromatic) Aqueous GC (W)	25-Oct-2019	25-Oct-2019	25-Oct-2019	26-Oct-2019	25-Oct-2019	26-Oct-2019	26-Oct-2019	25-Oct-2019	25-Oct-2019	25-Oct-2019
EPH CWG GC (S)	17-Oct-2019	17-Oct-2019	17-Oct-2019	22-Oct-2019	17-Oct-2019	23-Oct-2019	17-Oct-2019	24-Oct-2019	17-Oct-2019	17-Oct-2019
GRO by GC-FID (S)	23-Oct-2019	24-Oct-2019	24-Oct-2019	25-Oct-2019	23-Oct-2019	24-Oct-2019	25-Oct-2019	23-Oct-2019	24-Oct-2019	23-Oct-2019
GRO by GC-FID (W)	27-Oct-2019	24-Oct-2019	24-Oct-2019	27-Oct-2019	25-Oct-2019	27-Oct-2019	24-Oct-2019	27-Oct-2019	27-Oct-2019	27-Oct-2019
Mercury Dissolved	22-Oct-2019	25-Oct-2019	22-Oct-2019	18-Oct-2019	22-Oct-2019	18-Oct-2019	18-Oct-2019	24-Oct-2019	24-Oct-2019	25-Oct-2019
Metals in solid samples by OES	21-Oct-2019	21-Oct-2019	21-Oct-2019	23-Oct-2019	23-Oct-2019	21-Oct-2019	23-Oct-2019	23-Oct-2019	21-Oct-2019	23-Oct-2019
PAH by GCMS	21-Oct-2019	21-Oct-2019	21-Oct-2019	22-Oct-2019	22-Oct-2019	22-Oct-2019	22-Oct-2019	21-Oct-2019	18-Oct-2019	18-Oct-2019
PAH Spec MS - Aqueous (W)	25-Oct-2019	25-Oct-2019	25-Oct-2019	28-Oct-2019	24-Oct-2019	28-Oct-2019	28-Oct-2019	24-Oct-2019	24-Oct-2019	25-Oct-2019
pH	25-Oct-2019	24-Oct-2019	25-Oct-2019	24-Oct-2019	24-Oct-2019	25-Oct-2019	24-Oct-2019	25-Oct-2019	24-Oct-2019	25-Oct-2019
pH Value	25-Oct-2019	25-Oct-2019	25-Oct-2019	25-Oct-2019	25-Oct-2019	25-Oct-2019	25-Oct-2019	25-Oct-2019	25-Oct-2019	25-Oct-2019
Phenols by HPLC (S)	26-Oct-2019	26-Oct-2019	25-Oct-2019	28-Oct-2019	28-Oct-2019	28-Oct-2019	26-Oct-2019	25-Oct-2019	28-Oct-2019	28-Oct-2019
Sample description	12-Oct-2019	12-Oct-2019	12-Oct-2019	13-Oct-2019	13-Oct-2019	13-Oct-2019	13-Oct-2019	13-Oct-2019	12-Oct-2019	12-Oct-2019
Total Organic Carbon	23-Oct-2019	23-Oct-2019	23-Oct-2019	23-Oct-2019	25-Oct-2019	25-Oct-2019	23-Oct-2019	25-Oct-2019	23-Oct-2019	23-Oct-2019
TPH CWG (W)	27-Oct-2019	25-Oct-2019	25-Oct-2019	27-Oct-2019	25-Oct-2019	27-Oct-2019	26-Oct-2019	27-Oct-2019	27-Oct-2019	27-Oct-2019
TPH CWG GC (S)	24-Oct-2019	24-Oct-2019	24-Oct-2019	25-Oct-2019	24-Oct-2019	24-Oct-2019	25-Oct-2019	24-Oct-2019	24-Oct-2019	24-Oct-2019
VOC MS (S)	24-Oct-2019	23-Oct-2019	23-Oct-2019	24-Oct-2019	24-Oct-2019	23-Oct-2019	23-Oct-2019	24-Oct-2019	23-Oct-2019	24-Oct-2019

Lab Sample No(s)	20928264	20928269	20928278	20928284	20928292	20928300	20928310	20928321	20928330	20928349
Customer Sample Ref.	W96-04	W96-05	W96-06	W97-01	W97-02	W97-03	W97-04	W97-05	W97-06	W98-01
AGS Ref.										
Depth	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
Ammoniacal Nitrogen	23-Oct-2019	23-Oct-2019	23-Oct-2019	23-Oct-2019	23-Oct-2019	23-Oct-2019	23-Oct-2019	23-Oct-2019	23-Oct-2019	23-Oct-2019
Ammonium Soil by Titration	24-Oct-2019	24-Oct-2019	22-Oct-2019	24-Oct-2019	22-Oct-2019	22-Oct-2019	24-Oct-2019	22-Oct-2019	22-Oct-2019	24-Oct-2019
Asbestos ID in Solid Samples		24-Oct-2019		24-Oct-2019		24-Oct-2019		24-Oct-2019		24-Oct-2019
Asbestos Quantification - Full				28-Oct-2019				29-Oct-2019		
CEN 10:1 Leachate (1 Stage)	17-Oct-2019	16-Oct-2019	17-Oct-2019	17-Oct-2019	17-Oct-2019	17-Oct-2019	17-Oct-2019	17-Oct-2019	17-Oct-2019	17-Oct-2019
CEN Readings	21-Oct-2019	21-Oct-2019	23-Oct-2019	24-Oct-2019	21-Oct-2019	21-Oct-2019	21-Oct-2019	24-Oct-2019	23-Oct-2019	21-Oct-2019
Cyanide Comp/Free/Total/Thiocyanate	24-Oct-2019	24-Oct-2019	25-Oct-2019	25-Oct-2019	24-Oct-2019	24-Oct-2019	24-Oct-2019	25-Oct-2019	25-Oct-2019	24-Oct-2019
Dissolved Metals by ICP-MS	24-Oct-2019	24-Oct-2019	25-Oct-2019	25-Oct-2019	24-Oct-2019	24-Oct-2019	24-Oct-2019	25-Oct-2019	24-Oct-2019	24-Oct-2019
EPH CWG (Aliphatic) Aqueous GC (W)	25-Oct-2019	25-Oct-2019	25-Oct-2019	26-Oct-2019	25-Oct-2019	25-Oct-2019	25-Oct-2019	25-Oct-2019	26-Oct-2019	25-Oct-2019
EPH CWG (Aromatic) Aqueous GC (W)	25-Oct-2019	25-Oct-2019	25-Oct-2019	26-Oct-2019	25-Oct-2019	25-Oct-2019	25-Oct-2019	25-Oct-2019	26-Oct-2019	25-Oct-2019
EPH CWG GC (S)	17-Oct-2019	17-Oct-2019	17-Oct-2019	21-Oct-2019	21-Oct-2019	21-Oct-2019	22-Oct-2019	23-Oct-2019	21-Oct-2019	21-Oct-2019
GRO by GC-FID (S)	24-Oct-2019	24-Oct-2019	23-Oct-2019	23-Oct-2019	24-Oct-2019	24-Oct-2019	24-Oct-2019	23-Oct-2019	24-Oct-2019	24-Oct-2019
GRO by GC-FID (W)	27-Oct-2019	25-Oct-2019	24-Oct-2019	24-Oct-2019	24-Oct-2019	27-Oct-2019	27-Oct-2019	24-Oct-2019	24-Oct-2019	27-Oct-2019
Mercury Dissolved	22-Oct-2019	24-Oct-2019	25-Oct-2019	25-Oct-2019	24-Oct-2019	25-Oct-2019	22-Oct-2019	25-Oct-2019	25-Oct-2019	24-Oct-2019
Metals in solid samples by OES	21-Oct-2019	23-Oct-2019	23-Oct-2019	21-Oct-2019	21-Oct-2019	21-Oct-2019	24-Oct-2019	21-Oct-2019	23-Oct-2019	21-Oct-2019
PAH by GCMS	22-Oct-2019	22-Oct-2019	21-Oct-2019	21-Oct-2019	21-Oct-2019	21-Oct-2019	21-Oct-2019	22-Oct-2019	18-Oct-2019	21-Oct-2019
PAH Spec MS - Aqueous (W)	25-Oct-2019	25-Oct-2019	25-Oct-2019	28-Oct-2019	25-Oct-2019	24-Oct-2019	25-Oct-2019	25-Oct-2019	28-Oct-2019	25-Oct-2019
pH	24-Oct-2019	25-Oct-2019	22-Oct-2019	25-Oct-2019	24-Oct-2019	25-Oct-2019	24-Oct-2019	25-Oct-2019	24-Oct-2019	25-Oct-2019
pH Value	25-Oct-2019	25-Oct-2019	24-Oct-2019	24-Oct-2019	25-Oct-2019	24-Oct-2019	25-Oct-2019	24-Oct-2019	25-Oct-2019	25-Oct-2019
Phenols by HPLC (S)	26-Oct-2019	25-Oct-2019	26-Oct-2019	28-Oct-2019	26-Oct-2019	28-Oct-2019	26-Oct-2019	26-Oct-2019	28-Oct-2019	28-Oct-2019
Sample description	12-Oct-2019	13-Oct-2019	13-Oct-2019	12-Oct-2019	12-Oct-2019	12-Oct-2019	12-Oct-2019	13-Oct-2019	13-Oct-2019	12-Oct-2019
Total Organic Carbon	25-Oct-2019	23-Oct-2019	23-Oct-2019	23-Oct-2019	23-Oct-2019	23-Oct-2019	23-Oct-2019	23-Oct-2019	23-Oct-2019	23-Oct-2019
TPH CWG (W)	27-Oct-2019	25-Oct-2019	25-Oct-2019	26-Oct-2019	25-Oct-2019	27-Oct-2019	27-Oct-2019	25-Oct-2019	26-Oct-2019	27-Oct-2019
TPH CWG GC (S)	24-Oct-2019	24-Oct-2019	24-Oct-2019	24-Oct-2019	24-Oct-2019	24-Oct-2019	24-Oct-2019	24-Oct-2019	24-Oct-2019	24-Oct-2019
VOC MS (S)	23-Oct-2019	23-Oct-2019	24-Oct-2019	24-Oct-2019	23-Oct-2019	23-Oct-2019	23-Oct-2019	24-Oct-2019	23-Oct-2019	23-Oct-2019

Validated

CERTIFICATE OF ANALYSIS

SDG:	191012-76	**Client Reference:**		**Report Number:**	527515
Location:	Llanwern	**Order Number:**	LLA681	**Superseded Report:**	527504

Lab Sample No(s)	20928354	20928360	20928365	20928369	20928373	20928378	20928385	20928390	20928394	20928405
Customer Sample Ref.	W98-02	W98-03	W98-04	W99-01	W99-02	W99-03	W99-04	W99-05	W100-01	W100-02
AGS Ref.										
Depth	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
Ammoniacal Nitrogen	23-Oct-2019	23-Oct-2019	23-Oct-2019	23-Oct-2019	23-Oct-2019	23-Oct-2019	23-Oct-2019	23-Oct-2019	23-Oct-2019	23-Oct-2019
Ammonium Soil by Titration	25-Oct-2019	22-Oct-2019	24-Oct-2019	25-Oct-2019	22-Oct-2019	24-Oct-2019	24-Oct-2019	24-Oct-2019	24-Oct-2019	22-Oct-2019
Asbestos ID in Solid Samples		24-Oct-2019		24-Oct-2019		24-Oct-2019		24-Oct-2019		24-Oct-2019
CEN 10:1 Leachate (1 Stage)	17-Oct-2019	17-Oct-2019	17-Oct-2019	17-Oct-2019	17-Oct-2019	17-Oct-2019	17-Oct-2019	17-Oct-2019	17-Oct-2019	17-Oct-2019
CEN Readings	21-Oct-2019	21-Oct-2019	21-Oct-2019	23-Oct-2019	23-Oct-2019	23-Oct-2019	21-Oct-2019	23-Oct-2019	21-Oct-2019	21-Oct-2019
Cyanide Comp/Free/Total/Thiocyanate	24-Oct-2019	24-Oct-2019	24-Oct-2019	25-Oct-2019	25-Oct-2019	25-Oct-2019	24-Oct-2019	25-Oct-2019	24-Oct-2019	24-Oct-2019
Dissolved Metals by ICP-MS	24-Oct-2019	24-Oct-2019	24-Oct-2019	24-Oct-2019	24-Oct-2019	24-Oct-2019	24-Oct-2019	24-Oct-2019	24-Oct-2019	24-Oct-2019
EPH CWG (Aliphatic) Aqueous GC (W)	28-Oct-2019	25-Oct-2019	25-Oct-2019	26-Oct-2019	25-Oct-2019	26-Oct-2019	25-Oct-2019	25-Oct-2019	25-Oct-2019	25-Oct-2019
EPH CWG (Aromatic) Aqueous GC (W)	28-Oct-2019	25-Oct-2019	25-Oct-2019	26-Oct-2019	25-Oct-2019	26-Oct-2019	25-Oct-2019	25-Oct-2019	25-Oct-2019	25-Oct-2019
EPH CWG GC (S)	21-Oct-2019	21-Oct-2019	21-Oct-2019	22-Oct-2019	17-Oct-2019	17-Oct-2019	21-Oct-2019	21-Oct-2019	23-Oct-2019	17-Oct-2019
GRO by GC-FID (S)	24-Oct-2019	24-Oct-2019	24-Oct-2019	24-Oct-2019	24-Oct-2019	23-Oct-2019	24-Oct-2019	23-Oct-2019	24-Oct-2019	24-Oct-2019
GRO by GC-FID (W)	27-Oct-2019	24-Oct-2019	27-Oct-2019	24-Oct-2019	24-Oct-2019	27-Oct-2019	24-Oct-2019	25-Oct-2019	25-Oct-2019	24-Oct-2019
Mercury Dissolved	25-Oct-2019	24-Oct-2019	24-Oct-2019	25-Oct-2019	25-Oct-2019	25-Oct-2019	24-Oct-2019	25-Oct-2019	22-Oct-2019	22-Oct-2019
Metals in solid samples by OES	21-Oct-2019	21-Oct-2019	21-Oct-2019	23-Oct-2019	21-Oct-2019	21-Oct-2019	21-Oct-2019	25-Oct-2019	21-Oct-2019	21-Oct-2019
PAH by GCMS	18-Oct-2019	22-Oct-2019	23-Oct-2019	21-Oct-2019	21-Oct-2019	22-Oct-2019	23-Oct-2019	18-Oct-2019	21-Oct-2019	21-Oct-2019
PAH Spec MS - Aqueous (W)	25-Oct-2019	24-Oct-2019	24-Oct-2019	28-Oct-2019	25-Oct-2019	28-Oct-2019	25-Oct-2019	25-Oct-2019	24-Oct-2019	24-Oct-2019
pH	24-Oct-2019	25-Oct-2019	24-Oct-2019	25-Oct-2019	24-Oct-2019	25-Oct-2019	25-Oct-2019	25-Oct-2019	24-Oct-2019	24-Oct-2019
pH Value	25-Oct-2019	25-Oct-2019	24-Oct-2019	24-Oct-2019	24-Oct-2019	24-Oct-2019	25-Oct-2019	24-Oct-2019	25-Oct-2019	25-Oct-2019
Phenols by HPLC (S)	28-Oct-2019	28-Oct-2019	28-Oct-2019	28-Oct-2019	26-Oct-2019	25-Oct-2019	26-Oct-2019	28-Oct-2019	26-Oct-2019	26-Oct-2019
Sample description	12-Oct-2019	12-Oct-2019	12-Oct-2019	12-Oct-2019	12-Oct-2019	12-Oct-2019	12-Oct-2019	12-Oct-2019	12-Oct-2019	12-Oct-2019
Total Organic Carbon	23-Oct-2019	25-Oct-2019	23-Oct-2019	23-Oct-2019	25-Oct-2019	23-Oct-2019	23-Oct-2019	25-Oct-2019	18-Oct-2019	18-Oct-2019
TPH CWG (W)	28-Oct-2019	25-Oct-2019	27-Oct-2019	26-Oct-2019	25-Oct-2019	27-Oct-2019	25-Oct-2019	25-Oct-2019	25-Oct-2019	25-Oct-2019
TPH CWG GC (S)	24-Oct-2019	24-Oct-2019	24-Oct-2019	24-Oct-2019	24-Oct-2019	24-Oct-2019	24-Oct-2019	24-Oct-2019	24-Oct-2019	24-Oct-2019
VOC MS (S)	23-Oct-2019	23-Oct-2019	23-Oct-2019	23-Oct-2019	23-Oct-2019	24-Oct-2019	23-Oct-2019	24-Oct-2019	23-Oct-2019	23-Oct-2019

Lab Sample No(s)	20928412	20928417	20928421	20928430	20928436	20928440	20928444	20928449	20928454	20928464
Customer Sample Ref.	W100-03	W100-04	W101-01	W101-02	W101-03	W102-01	W102-02	W102-03	W103-01	W103-02
AGS Ref.										
Depth	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
Ammoniacal Nitrogen	23-Oct-2019	23-Oct-2019	23-Oct-2019	23-Oct-2019	23-Oct-2019	23-Oct-2019	23-Oct-2019	23-Oct-2019	23-Oct-2019	23-Oct-2019
Ammonium Soil by Titration	24-Oct-2019	22-Oct-2019	22-Oct-2019	24-Oct-2019	25-Oct-2019	22-Oct-2019	22-Oct-2019	24-Oct-2019	22-Oct-2019	24-Oct-2019
Asbestos ID in Solid Samples		24-Oct-2019	24-Oct-2019		24-Oct-2019	24-Oct-2019		24-Oct-2019	24-Oct-2019	
Asbestos Quantification - Full		24-Oct-2019							29-Oct-2019	
CEN 10:1 Leachate (1 Stage)	17-Oct-2019	17-Oct-2019	17-Oct-2019	17-Oct-2019	17-Oct-2019	17-Oct-2019	17-Oct-2019	17-Oct-2019	17-Oct-2019	17-Oct-2019
CEN Readings	21-Oct-2019	21-Oct-2019	21-Oct-2019	21-Oct-2019	21-Oct-2019	23-Oct-2019	23-Oct-2019	23-Oct-2019	23-Oct-2019	23-Oct-2019
Cyanide Comp/Free/Total/Thiocyanate	24-Oct-2019	24-Oct-2019	24-Oct-2019	24-Oct-2019	24-Oct-2019	25-Oct-2019	25-Oct-2019	25-Oct-2019	25-Oct-2019	25-Oct-2019
Dissolved Metals by ICP-MS	24-Oct-2019	24-Oct-2019	24-Oct-2019	24-Oct-2019	24-Oct-2019	24-Oct-2019	24-Oct-2019	24-Oct-2019	25-Oct-2019	24-Oct-2019
EPH CWG (Aliphatic) Aqueous GC (W)	25-Oct-2019	25-Oct-2019	25-Oct-2019	25-Oct-2019	25-Oct-2019	26-Oct-2019	25-Oct-2019	25-Oct-2019	25-Oct-2019	25-Oct-2019
EPH CWG (Aromatic) Aqueous GC (W)	25-Oct-2019	25-Oct-2019	25-Oct-2019	25-Oct-2019	25-Oct-2019	26-Oct-2019	25-Oct-2019	25-Oct-2019	25-Oct-2019	25-Oct-2019
EPH CWG GC (S)	17-Oct-2019	21-Oct-2019	21-Oct-2019	21-Oct-2019	21-Oct-2019	21-Oct-2019	17-Oct-2019	23-Oct-2019	23-Oct-2019	21-Oct-2019
GRO by GC-FID (S)	24-Oct-2019	24-Oct-2019	23-Oct-2019	24-Oct-2019	24-Oct-2019	25-Oct-2019	24-Oct-2019	24-Oct-2019	24-Oct-2019	24-Oct-2019
GRO by GC-FID (W)	25-Oct-2019	24-Oct-2019	25-Oct-2019	24-Oct-2019	24-Oct-2019	24-Oct-2019	24-Oct-2019	24-Oct-2019	24-Oct-2019	27-Oct-2019
Mercury Dissolved	22-Oct-2019	22-Oct-2019	22-Oct-2019	22-Oct-2019	22-Oct-2019	25-Oct-2019	25-Oct-2019	25-Oct-2019	25-Oct-2019	25-Oct-2019
Metals in solid samples by OES	21-Oct-2019	21-Oct-2019	23-Oct-2019	21-Oct-2019	21-Oct-2019	21-Oct-2019	21-Oct-2019	23-Oct-2019	23-Oct-2019	21-Oct-2019
PAH by GCMS	21-Oct-2019	21-Oct-2019	21-Oct-2019	24-Oct-2019	18-Oct-2019	23-Oct-2019	22-Oct-2019	24-Oct-2019	21-Oct-2019	25-Oct-2019
PAH Spec MS - Aqueous (W)	25-Oct-2019	24-Oct-2019	24-Oct-2019	25-Oct-2019	25-Oct-2019	25-Oct-2019	25-Oct-2019	25-Oct-2019	25-Oct-2019	25-Oct-2019
pH	24-Oct-2019	25-Oct-2019	25-Oct-2019	24-Oct-2019	25-Oct-2019	25-Oct-2019	24-Oct-2019	25-Oct-2019	24-Oct-2019	24-Oct-2019
pH Value	25-Oct-2019	25-Oct-2019	25-Oct-2019	25-Oct-2019	25-Oct-2019	24-Oct-2019	25-Oct-2019	25-Oct-2019	24-Oct-2019	25-Oct-2019
Phenols by HPLC (S)	28-Oct-2019	26-Oct-2019	28-Oct-2019	28-Oct-2019	28-Oct-2019	28-Oct-2019	26-Oct-2019	26-Oct-2019	26-Oct-2019	28-Oct-2019
Sample description	12-Oct-2019	12-Oct-2019	12-Oct-2019	12-Oct-2019	12-Oct-2019	12-Oct-2019	12-Oct-2019	12-Oct-2019	12-Oct-2019	12-Oct-2019
Total Organic Carbon	23-Oct-2019	23-Oct-2019	23-Oct-2019	18-Oct-2019	18-Oct-2019	23-Oct-2019	23-Oct-2019	23-Oct-2019	25-Oct-2019	18-Oct-2019
TPH CWG (W)	25-Oct-2019	25-Oct-2019	25-Oct-2019	25-Oct-2019	25-Oct-2019	26-Oct-2019	25-Oct-2019	25-Oct-2019	25-Oct-2019	27-Oct-2019
TPH CWG GC (S)	24-Oct-2019	24-Oct-2019	24-Oct-2019	24-Oct-2019	24-Oct-2019	25-Oct-2019	24-Oct-2019	24-Oct-2019	24-Oct-2019	24-Oct-2019
VOC MS (S)	23-Oct-2019	23-Oct-2019	24-Oct-2019	23-Oct-2019	23-Oct-2019	23-Oct-2019	23-Oct-2019	23-Oct-2019	23-Oct-2019	23-Oct-2019

Validated

CERTIFICATE OF ANALYSIS

SDG:	191012-76	**Client Reference:**		**Report Number:**	527515
Location:	Llanwern	**Order Number:**	LLA681	**Superseded Report:**	527504

Lab Sample No(s)	20928469
Customer Sample Ref.	W103-03
AGS Ref.	
Depth	0.00 - 0.00
Type	Soil/Solid (S)

Ammoniacal Nitrogen	23-Oct-2019
Ammonium Soil by Titration	22-Oct-2019
Asbestos ID in Solid Samples	24-Oct-2019
Asbestos Quantification - Full	28-Oct-2019
CEN 10:1 Leachate (1 Stage)	17-Oct-2019
CEN Readings	21-Oct-2019
Cyanide Comp/Free/Total/Thiocyanate	24-Oct-2019
Dissolved Metals by ICP-MS	24-Oct-2019
EPH CWG (Aliphatic) Aqueous GC (W)	25-Oct-2019
EPH CWG (Aromatic) Aqueous GC (W)	25-Oct-2019
EPH CWG GC (S)	21-Oct-2019
GRO by GC-FID (S)	24-Oct-2019
GRO by GC-FID (W)	27-Oct-2019
Mercury Dissolved	25-Oct-2019
Metals in solid samples by OES	23-Oct-2019
PAH by GCMS	22-Oct-2019
PAH Spec MS - Aqueous (W)	25-Oct-2019
pH	25-Oct-2019
pH Value	25-Oct-2019
Phenols by HPLC (S)	26-Oct-2019
Sample description	12-Oct-2019
Total Organic Carbon	23-Oct-2019
TPH CWG (W)	27-Oct-2019
TPH CWG GC (S)	24-Oct-2019
VOC MS (S)	23-Oct-2019

Appendix General

1. Results are expressed on a dry weight basis (dried at 35ºC) for all soil analyses except for the following: NRA and CEN Leach tests, flash point LOI, pH, ammonium as NH4 by the BRE method, VOC TICs and SVOC TICs.

2. If sufficient sample is received a sub sample will be retained free of charge for 30 days after analysis is completed (e-mailed) for all sample types unless the sample is destroyed on testing. The prepared soil sub sample that is analysed for asbestos will be retained for a period of 6 months after the analysis date. All bulk samples will be retained for a period of 6 months after the analysis date. All samples received and not scheduled will be disposed of one month after the date of receipt unless we are instructed to the contrary. Once the initial period has expired, a storage charge will be applied for each month or part thereof until the client cancels the request for sample storage. ALS reserve the right to charge for samples received and stored but not analysed.

3. With respect to turnaround, we will always endeavour to meet client requirements wherever possible, but turnaround times cannot be absolutely guaranteed due to so many variables beyond our control.

4. We take responsibility for any test performed by sub-contractors (marked with an asterisk). We endeavour to use UKAS/MCERTS Accredited Laboratories, who either complete a quality questionnaire or are audited by ourselves. For some determinands there are no UKAS/MCERTS Accredited Laboratories, in this instance a laboratory with a known track record will be utilised.

5. If no separate volatile sample is supplied by the client, or if a headspace or sediment is present in the volatile sample, the integrity of the data may be compromised. This will be flagged up as an invalid VOC on the test schedule and the result marked as deviating on the test certificate.

6. NDP - No determination possible due to insufficient/unsuitable sample.

7. Results relate only to the items tested.

8. LoDs (Limit of Detection) for wet tests reported on a dry weight basis are not corrected for moisture content.

9. **Surrogate recoveries** - Surrogates are added to your sample to monitor recovery of the test requested. A % recovery is reported, results are not corrected for the recovery measured. Typical recoveries for organics tests are 70-130%. Recoveries in soils are affected by organic rich or clay rich matrices. Waters can be affected by remediation fluids or high amounts of sediment. Test results are only ever reported if all of the associated quality checks pass; it is assumed that all recoveries outside of the values above are due to matrix affect.

10. Stones/debris are not routinely removed. We always endeavour to take a representative sub sample from the received sample.

11. In certain circumstances the method detection limit may be elevated due to the sample being outside the calibration range. Other factors that may contribute to this include possible interferences. In both cases the sample would be diluted which would cause the method detection limit to be raised.

12. Mercury results quoted on soils will not include volatile mercury as the analysis is performed on a dried and crushed sample.

13. For leachate preparations other than Zero Headspace Extraction (ZHE) volatile loss may occur.

14. For the BSEN 12457-3 two batch process to allow the cumulative release to be calculated, the volume of the leachate produced is measured and filtered for all tests. We therefore cannot carry out any unfiltered analysis. The tests affected include volatiles GCFID/GCMS and all subcontracted analysis.

15. Analysis and identification of specific compounds using GCFID is by retention time only, and we routinely calibrate and quantify for benzene, toluene, ethylbenzenes and xylenes (BTEX). For total volatiles in the C5-C12 range, the total area of the chromatogram is integrated and expressed as ug/kg or ug/l. Although this analysis is commonly used for the quantification of gasoline range organics (GRO), the system will also detect other compounds such as chlorinated solvents, and this may lead to a falsely high result with respect to hydrocarbons only. It is not possible to specifically identify these non-hydrocarbons, as standards are not routinely run for any other compounds, and for more definitive identification, volatiles by GCMS should be utilised.

16. We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample. Other coarse granular material such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

17. **Tentatively Identified Compounds (TICs)** are non-target peaks in VOC and SVOC analysis. All non-target peaks detected with a concentration above the LoD are subjected to a mass spectral library search. Non-target peaks with a library search confidence of >75% are reported based on the best mass spectral library match. When a non-target peak with a library search confidence of <75% is detected it is reported as "mixed hydrocarbons". Non-target compounds identified from the scan data are semi-quantified relative to one of the deuterated internal standards, under the same chromatographic conditions as the target compounds. This result is reported as a semi-quantitative value and reported as Tentatively Identified Compounds (TICs). TICs are outside the scope of UKAS accreditation and are not moisture corrected.

18. **Sample Deviations**

If a sample is classed as deviated then the associated results may be compromised.

1	**Container with Headspace provided for volatiles analysis**
2	**Incorrect container received**
3	**Deviation from method**
§	**Sampled on date not provided**
♦	**Sample holding time exceeded in laboratory**
@	**Sample holding time exceeded due to late arrival of instructions or samples**

19. **Asbestos**

When requested, the individual sub sample scheduled will be analysed in house for the presence of asbestos fibres and asbestos containing material by our documented in house method TM048 based on HSG 248 (2005), which is accredited to ISO17025. If a specific asbestos fibre type is not found this will be reported as "Not detected". If no asbestos fibre types are found all will be reported as "Not detected" and the sub sample analysed deemed to be clear of asbestos. If an asbestos fibre type is found it will be reported as detected (for each fibre type found). Testing can be carried out on asbestos positive samples, but, due to Health and Safety considerations, may be replaced by alternative tests or reported as No Determination Possible (NDP). The quantity of

Identification of Asbestos in Bulk Materials & Soils

The results for identification of asbestos in bulk materials are obtained from supplied bulk materials which have been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

The results for identification of asbestos in soils are obtained from a homogenised sub sample which has been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

Asbestos Type	Common Name
Chrysotile	White Asbestos
Amosite	Brown Asbestos
Crocidolite	Blue Asbestos
Fibrous Actinolite	-
Fibrous Anthophyllite	-
Fibrous Tremolite	-

Visual Estimation Of Fibre Content

Estimation of fibre content is not permitted as part of our UKAS accredited test other than: - Trace - Where only one or two asbestos fibres were identified.

Respirable Fibres

Respirable fibres are defined as fibres of <3 µm diameter, longer than 5 µm and with aspect ratios of at least 3:1 that can be inhaled into the lower regions of the lung and are generally acknowledged to be most important predictor of hazard and risk for cancers of the lung.
Standing Committee of Analysts, *The Quantification of Asbestos in Soil (2107).*

Further guidance on typical asbestos fibre content of manufactured products can be found in HSG 264.

The identification of asbestos containing materials and soils falls within our schedule of tests for which we hold UKAS accreditation, however opinions, interpretations and all other information contained in the report are outside the scope of UKAS accreditation.

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Rodgers Leask
Office 225
2430/2440
Aztec West
Almondsbury
Bristol
BS32 4QA

Attention: Elliot Thomas

CERTIFICATE OF ANALYSIS

Date of report Generation:	19 January 2021
Customer:	Rodgers Leask
Sample Delivery Group (SDG):	201208-47
Your Reference:	P18-669
Location:	Llanwern
Report No:	583654

This report has been revised and directly supersedes 580121 in its entirety.

We received 8 samples on Tuesday December 08, 2020 and 8 of these samples were scheduled for analysis which was completed on Tuesday January 19, 2021. Accredited laboratory tests are defined within the report, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation.

Should this report require incorporation into client reports, it must be used in its entirety and not simply with the data sections alone.

Chemical testing (unless subcontracted) performed at ALS Life Sciences Ltd Hawarden (Method codes TM) or ALS Life Sciences Ltd Aberdeen (Method codes S).

All sample data is provided by the customer. The reported results relate to the sample supplied, and on the basis that this data is correct.
Incorrect sampling dates and/or sample information will affect the validity of results.
The customer is not permitted to reproduce this report except in full without the approval of the laboratory.

Approved By:

Sonia McWhan

Operations Manager

ALS Life Sciences Limited. Registered Office: Units 7 & 8 Hawarden Business Park, Manor Road, Hawarden, Deeside, CH5 3US. Registered in England and Wales No. 4057291.

CERTIFICATE OF ANALYSIS

SDG:	201208-47	**Client Reference:**	P18-669	**Report Number:**	583654
Location:	Llanwern	**Order Number:**		**Superseded Report:**	580121

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
23383659	U37-1		0.30 - 0.30	07/12/2020
23383668	U37-2		1.50 - 1.50	07/12/2020
23383674	V35-1		0.20 - 0.20	07/12/2020
23383679	V35-2		1.50 - 1.50	07/12/2020
23383638	V37-1		0.50 - 0.50	07/12/2020
23383648	V37-2		1.50 - 1.50	07/12/2020
23383621	W37-1		0.50 - 0.50	07/12/2020
23383628	W37-2		1.50 - 1.50	07/12/2020

Only received samples which have had analysis scheduled will be shown on the following pages.

Validated

CERTIFICATE OF ANALYSIS

SDG:	201208-47	**Client Reference:**	P18-669	**Report Number:**	583654
Location:	Llanwern	**Order Number:**		**Superseded Report:**	580121

Results Legend

X Test

N No Determination Possible

Sample Types -

S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

Lab Sample No(s)			23383659		23383668			23383674		23383679		23383638		23383648			23383621		23383628		
Customer Sample Reference			U37-1		U37-2			V35-1		V35-2		V37-1		V37-2			W37-1		W37-2		
AGS Reference																					
Depth (m)			0.30 - 0.30		1.50 - 1.50			0.20 - 0.20		1.50 - 1.50		0.50 - 0.50		1.50 - 1.50			0.50 - 0.50		1.50 - 1.50		
Container			1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)
Sample Type			S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
Ammonium Soil by Titration	All	NDPs: 0 Tests: 8		X		X			X		X		X			X			X		X
Asbestos ID in Solid Samples	All	NDPs: 0 Tests: 4	X					X							X			X			
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 8		X		X			X		X		X			X			X		X
EPH CWG GC (S)	All	NDPs: 0 Tests: 8		X		X			X		X		X			X			X		X
GRO by GC-FID (S)	All	NDPs: 0 Tests: 8			X		X			X		X		X			X			X	
Metals in solid samples by OES	All	NDPs: 0 Tests: 8		X		X			X		X		X			X			X		X
PAH by GCMS	All	NDPs: 0 Tests: 8		X		X			X		X		X			X			X		X
pH	All	NDPs: 0 Tests: 8		X		X			X		X		X			X			X		X
Phenols by HPLC (S)	All	NDPs: 0 Tests: 8		X		X			X		X		X			X			X		X
Sample description	All	NDPs: 0 Tests: 8		X		X			X		X		X			X			X		X
Total Organic Carbon	All	NDPs: 0 Tests: 8		X		X			X		X		X			X			X		X
TPH CWG GC (S)	All	NDPs: 0 Tests: 8		X		X			X		X		X			X			X		X
VOC MS (S)	All	NDPs: 0 Tests: 8			X		X			X		X		X			X			X	

23383628	W37-2		1.50 - 1.50	60g VOC (ALE215)	S
					X
					X

CERTIFICATE OF ANALYSIS

SDG:	201208-47	**Client Reference:**	P18-669	**Report Number:**	583654
Location:	Llanwern	**Order Number:**		**Superseded Report:**	580121

Sample Descriptions

Grain Sizes

very fine	<0.063mm	fine	0.063mm - 0.1mm	medium	0.1mm - 2mm	coarse	2mm - 10mm	very coarse	>10mm

Lab Sample No(s)	Customer Sample Ref.	Depth (m)	Colour	Description	Inclusions	Inclusions 2
23383659	U37-1	0.30 - 0.30	Dark Brown	Sandy Silt Loam	Stones	Vegetation
23383668	U37-2	1.50 - 1.50	Dark Brown	Silt Loam	Stones	Oil/Petroleum
23383674	V35-1	0.20 - 0.20	Dark Brown	Loamy Sand	Stones	None
23383679	V35-2	1.50 - 1.50	Dark Brown	Sandy Silt Loam	Stones	None
23383638	V37-1	0.50 - 0.50	Dark Brown	Sand	Stones	None
23383648	V37-2	1.50 - 1.50	Grey	Silty Clay Loam	Stones	None
23383621	W37-1	0.50 - 0.50	Dark Brown	Loamy Sand	Stones	Vegetation
23383628	W37-2	1.50 - 1.50	Dark Brown	Loamy Sand	Stones	Oil/Petroleum

These descriptions are only intended to act as a cross check if sample identities are questioned, and to provide a log of sample matrices with respect to MCERTS validation. They are not intended as full geological descriptions.

We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally ocurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample.

Other coarse granular materials such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

Validated

CERTIFICATE OF ANALYSIS

SDG:	201208-47	**Client Reference:**	P18-669	**Report Number:**	583654
Location:	Llanwern	**Order Number:**		**Superseded Report:**	580121

Results Legend	
#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	U37-1	U37-2	V35-1	V35-2	V37-1	V37-2
			Depth (m)	0.30 - 0.30	1.50 - 1.50	0.20 - 0.20	1.50 - 1.50	0.50 - 0.50	1.50 - 1.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	07/12/2020	07/12/2020	07/12/2020	07/12/2020	07/12/2020	07/12/2020
			Sample Time	.	.	.	.	.	.
			Date Received	08/12/2020	08/12/2020	08/12/2020	08/12/2020	08/12/2020	08/12/2020
			SDG Ref	201208-47	201208-47	201208-47	201208-47	201208-47	201208-47
			Lab Sample No.(s)	23383659	23383668	23383674	23383679	23383638	23383648
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		4.5	8.8	4.8	5.4	4.3	24
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	<12 M	<12 M	<12 M	<12 M	46.1 M
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Cresols	<0.01 mg/kg	TM062 (S)		0.0105 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M
Soil Organic Matter (SOM)	<0.35 %	TM132		0.572 #	1.48 #	2 #	1.28 #	1.53 #	5.64 #
pH	1 pH Units	TM133		8.23 M	7.83 M	10.8 M	11.5 M	9.1 M	7.91 M
Cyanide, Total	<1 mg/kg	TM153		<1 M	<1 M	<1 M	<1 M	<1 M	<1 M
Arsenic	<0.6 mg/kg	TM181		4.98 M	3.67 M	5.73 M	3.64 M	5.18 M	9.2 M
Cadmium	<0.02 mg/kg	TM181		0.191 M	0.032 M	0.622 M	0.274 M	<0.02 M	<0.02 M
Chromium	<0.9 mg/kg	TM181		23 M	3.47 M	50.3 M	225 M	<0.9 M	10.1 M
Copper	<1.4 mg/kg	TM181		20.6 M	6.84 M	12.8 M	7.88 M	8.51 M	13.4 M
Iron	<1000 mg/kg	TM181		32300 #	7080 #	77700 #	95700 #	35900 #	25200 #
Lead	<0.7 mg/kg	TM181		15.9 M	1.62 M	76.5 M	24.9 M	17.5 M	18.7 M
Manganese	<0.13 mg/kg	TM181		1480 M	965 M	7650 M	20200 M	639 M	537 M
Mercury	<0.14 mg/kg	TM181		<0.14 M	<0.14 M	<0.14 M	<0.14 M	<0.14 M	<0.14 M
Nickel	<0.2 mg/kg	TM181		31 M	4.3 M	8.31 M	7.37 M	7.92 M	24.9 M
Selenium	<1 mg/kg	TM181		<1 #	<1 #	<1 #	6.21 #	<1 #	<1 #
Vanadium	<0.2 mg/kg	TM181		33.5 #	5.23 #	147 #	262 #	16.7 #	27.5 #
Zinc	<1.9 mg/kg	TM181		81.2 M	15 M	270 M	136 M	37.1 M	63.4 M

Validated

CERTIFICATE OF ANALYSIS

SDG:	201208-47	**Client Reference:**	P18-669	**Report Number:**	583654
Location:	Llanwern	**Order Number:**		**Superseded Report:**	580121

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	W37-1	W37-2				
			Depth (m)	0.50 - 0.50	1.50 - 1.50				
			Sample Type	Soil/Solid (S)	Soil/Solid (S)				
			Date Sampled	07/12/2020	07/12/2020				
			Sample Time	.	.				
			Date Received	08/12/2020	08/12/2020				
			SDG Ref	201208-47	201208-47				
			Lab Sample No.(s)	23383621	23383628				
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		15	18				
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	<12 M				
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 M	0.0121 M				
Cresols	<0.01 mg/kg	TM062 (S)		0.0236 M	0.0121 M				
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M				
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 M				
Soil Organic Matter (SOM)	<0.35 %	TM132		5.07 #	2.43 #				
pH	1 pH Units	TM133		8.46 M	7.95 M				
Cyanide, Total	<1 mg/kg	TM153		<1 M	<1 M				
Arsenic	<0.6 mg/kg	TM181		35.1 M	66.6 M				
Cadmium	<0.02 mg/kg	TM181		<0.02 M	0.0515 M				
Chromium	<0.9 mg/kg	TM181		99.7 M	389 M				
Copper	<1.4 mg/kg	TM181		12 M	16.9 M				
Iron	<1000 mg/kg	TM181		71600 #	133000 #				
Lead	<0.7 mg/kg	TM181		36 M	63.3 M				
Manganese	<0.13 mg/kg	TM181		923 M	419 M				
Mercury	<0.14 mg/kg	TM181		0.163 M	0.219 M				
Nickel	<0.2 mg/kg	TM181		79.2 M	274 M				
Selenium	<1 mg/kg	TM181		<1 #	<1 #				
Vanadium	<0.2 mg/kg	TM181		110 #	269 #				
Zinc	<1.9 mg/kg	TM181		101 M	48.8 M				

Validated

CERTIFICATE OF ANALYSIS

SDG:	201208-47	**Client Reference:**	P18-669	**Report Number:**	583654
Location:	Llanwern	**Order Number:**		**Superseded Report:**	580121

PAH by GCMS

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	U37-1	U37-2	V35-1	V35-2	V37-1	V37-2
			Depth (m)	0.30 - 0.30	1.50 - 1.50	0.20 - 0.20	1.50 - 1.50	0.50 - 0.50	1.50 - 1.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	07/12/2020	07/12/2020	07/12/2020	07/12/2020	07/12/2020	07/12/2020
			Sample Time	.	.	.	.	.	.
			Date Received	08/12/2020	08/12/2020	08/12/2020	08/12/2020	08/12/2020	08/12/2020
			SDG Ref	201208-47	201208-47	201208-47	201208-47	201208-47	201208-47
			Lab Sample No.(s)	23383659	23383668	23383674	23383679	23383638	23383648
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		94	87.3	87.8	83.4	87.9	88.1
Acenaphthene-d10 % recovery**	%	TM218		90.2	92.7	90	93.4	90.7	92.8
Phenanthrene-d10 % recovery**	%	TM218		96.8	97.1	94.4	98.8	91.9	96
Chrysene-d12 % recovery**	%	TM218		97.4	81.5	86.9	88.3	81.6	88.5
Perylene-d12 % recovery**	%	TM218		103	75.1	81.4	84.3	74.6	82.3
Naphthalene	<9 µg/kg	TM218		<180 M	98.9 M	218 M	3550 M	16.6 M	24.5 M
Acenaphthylene	<12 µg/kg	TM218		<240 M	<12 M	95.2 M	80.5 M	<12 M	<12 M
Acenaphthene	<8 µg/kg	TM218		<160 M	36.4 M	51.4 M	72.6 M	<8 M	27.9 M
Fluorene	<10 µg/kg	TM218		<200 M	53.4 M	121 M	198 M	<10 M	41 M
Phenanthrene	<15 µg/kg	TM218		<300 M	102 M	1180 M	793 M	34.6 M	86.4 M
Anthracene	<16 µg/kg	TM218		<320 M	<16 M	256 M	114 M	<16 M	<16 M
Fluoranthene	<17 µg/kg	TM218		363 M	83.1 M	1860 M	919 M	21.7 M	108 M
Pyrene	<15 µg/kg	TM218		<300 M	102 M	1540 M	708 M	23.5 M	96.1 M
Benz(a)anthracene	<14 µg/kg	TM218		<280 M	34.6 M	857 M	390 M	<14 M	41.4 M
Chrysene	<10 µg/kg	TM218		280 M	52.2 M	851 M	321 M	18.1 M	35.7 M
Benzo(b)fluoranthene	<15 µg/kg	TM218		329 M	42.2 M	1060 M	523 M	22.4 M	43.4 M
Benzo(k)fluoranthene	<14 µg/kg	TM218		<280 M	<14 M	287 M	133 M	<14 M	<14 M
Benzo(a)pyrene	<15 µg/kg	TM218		<300 M	37.6 M	725 M	309 M	<15 M	29.9 M
Indeno(1,2,3-cd)pyrene	<18 µg/kg	TM218		<360 M	27.5 M	510 M	247 M	<18 M	<18 M
Dibenzo(a,h)anthracene	<23 µg/kg	TM218		<460 M	<23 M	104 M	46.5 M	<23 M	<23 M
Benzo(g,h,i)perylene	<24 µg/kg	TM218		<480 M	31.7 M	426 M	199 M	<24 M	<24 M
PAH, Total Detected USEPA 16	<118 µg/kg	TM218		<2360	702	10100	8600	137	534

Validated

CERTIFICATE OF ANALYSIS

SDG:	201208-47	**Client Reference:**	P18-669	**Report Number:**	583654
Location:	Llanwern	**Order Number:**		**Superseded Report:**	580121

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
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**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	W37-1	W37-2				
			Depth (m)	0.50 - 0.50	1.50 - 1.50				
			Sample Type	Soil/Solid (S)	Soil/Solid (S)				
			Date Sampled	07/12/2020	07/12/2020				
			Sample Time	.	.				
			Date Received	08/12/2020	08/12/2020				
			SDG Ref	201208-47	201208-47				
			Lab Sample No.(s)	23383621	23383628				
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		85.2	86.4				
Acenaphthene-d10 % recovery**	%	TM218		89.3	91.6				
Phenanthrene-d10 % recovery**	%	TM218		88.8	95.4				
Chrysene-d12 % recovery**	%	TM218		78.6	86.6				
Perylene-d12 % recovery**	%	TM218		74	79				
Naphthalene	<9 µg/kg	TM218		<90 M	29.5 M				
Acenaphthylene	<12 µg/kg	TM218		<120 M	<12 M				
Acenaphthene	<8 µg/kg	TM218		<80 M	63.4 M				
Fluorene	<10 µg/kg	TM218		<100 M	110 M				
Phenanthrene	<15 µg/kg	TM218		<150 M	62.7 M				
Anthracene	<16 µg/kg	TM218		<160 M	<16 M				
Fluoranthene	<17 µg/kg	TM218		<170 M	51.1 M				
Pyrene	<15 µg/kg	TM218		<150 M	86.7 M				
Benz(a)anthracene	<14 µg/kg	TM218		<140 M	<14 M				
Chrysene	<10 µg/kg	TM218		<100 M	16.5 M				
Benzo(b)fluoranthene	<15 µg/kg	TM218		<150 M	18.4 M				
Benzo(k)fluoranthene	<14 µg/kg	TM218		<140 M	<14 M				
Benzo(a)pyrene	<15 µg/kg	TM218		<150 M	<15 M				
Indeno(1,2,3-cd)pyrene	<18 µg/kg	TM218		<180 M	<18 M				
Dibenzo(a,h)anthracene	<23 µg/kg	TM218		<230 M	<23 M				
Benzo(g,h,i)perylene	<24 µg/kg	TM218		<240 M	<24 M				
PAH, Total Detected USEPA 16	<118 µg/kg	TM218		<1180	439				

Validated

CERTIFICATE OF ANALYSIS

SDG: 201208-47 **Client Reference:** P18-669 **Report Number:** 583654
Location: Llanwern **Order Number:** **Superseded Report:** 580121

TPH CWG (S)

Results Legend	
#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	U37-1	U37-2	V35-1	V35-2	V37-1	V37-2
			Depth (m)	0.30 - 0.30	1.50 - 1.50	0.20 - 0.20	1.50 - 1.50	0.50 - 0.50	1.50 - 1.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	07/12/2020	07/12/2020	07/12/2020	07/12/2020	07/12/2020	07/12/2020
			Sample Time	.	.	.	.	.	.
			Date Received	08/12/2020	08/12/2020	08/12/2020	08/12/2020	08/12/2020	08/12/2020
			SDG Ref	201208-47	201208-47	201208-47	201208-47	201208-47	201208-47
			Lab Sample No.(s)	23383659	23383668	23383674	23383679	23383638	23383648
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		60.7 4 @	86.7 @	80 @	80.9 @	82.5 @	78.3 @
Aliphatics >C5-C6	<10 µg/kg	TM089		31.4 4 @	39.5 @	38.9 @	46.5 @	<10 @	47.2 @
Aliphatics >C6-C8	<10 µg/kg	TM089		36.6 4 @	81.2 @	47.3 @	113 @	<10 @	76 @
Aliphatics >C8-C10	<10 µg/kg	TM089		53.4 4 @	448 @	170 @	2110 @	<10 @	1200 @
Aliphatics >C10-C12	<1000 µg/kg	TM414		<1000	19200	1280	55300	<1000	9120
Aliphatics >C12-C16	<1000 µg/kg	TM414		9590	68000	31600	382000	5400	35600
Aliphatics >C16-C21	<1000 µg/kg	TM414		27300	137000	59600	558000	32700	34900
Aliphatics >C21-C35	<1000 µg/kg	TM414		42600	1090000	281000	3380000	93500	239000
Aliphatics >C35-C44	<1000 µg/kg	TM414		<1000	413000	45200	624000	25900	76800
Total Aliphatics >C10-C44	<5000 µg/kg	TM414		80400	1720000	418000	5000000	158000	395000
Total Aliphatics & Aromatics >C10-C44	<10000 µg/kg	TM414		1000000	1830000	464000	5290000	183000	462000
Aromatics >EC5-EC7	<10 µg/kg	TM089		29.3 4 @	45 @	75.7 @	216 @	<10 @	<10 @
Aromatics >EC7-EC8	<10 µg/kg	TM089		98.4 4 @	<10 @	14.7 @	71.9 @	<10 @	<10 @
Aromatics >EC8-EC10	<10 µg/kg	TM089		35.6 4 @	298 @	114 @	1410 @	<10 @	802 @
Aromatics > EC10-EC12	<1000 µg/kg	TM414		<1000	2130	<1000	17100	<1000	<1000
Aromatics > EC12-EC16	<1000 µg/kg	TM414		24500	12900	4900	78800	<1000	2530
Aromatics > EC16-EC21	<1000 µg/kg	TM414		44600	13500	9520	56700	<1000	6070
Aromatics > EC21-EC35	<1000 µg/kg	TM414		661000	80300	30200	138000	23400	51300
Aromatics >EC35-EC44	<1000 µg/kg	TM414		189000	1100	1060	<1000	1680	6640
Aromatics > EC40-EC44	<1000 µg/kg	TM414		1720	<1000	<1000	<1000	1080	2750
Total Aromatics > EC10-EC44	<5000 µg/kg	TM414		921000	110000	46000	291000	25600	66500
Total Aliphatics & Aromatics >C5-C44	<10000 µg/kg	TM414		1000000	1840000	465000	5300000	183000	464000
Total Aliphatics >C5-C10	<50 µg/kg	TM089		121 4 @	568 @	256 @	2270 @	<50 @	1330 @
Total Aromatics >EC5-EC10	<50 µg/kg	TM089		163 4 @	343 @	204 @	1700 @	<50 @	802 @
GRO >C5-C10	<20 µg/kg	TM089		285 4 @	912 @	460 @	3970 @	<20 @	2130 @

Validated

CERTIFICATE OF ANALYSIS

SDG:	201208-47	**Client Reference:**	P18-669	**Report Number:**	583654
Location:	Llanwern	**Order Number:**		**Superseded Report:**	580121

TPH CWG (S)

Results Legend

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(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	W37-1	W37-2				
			Depth (m)	0.50 - 0.50	1.50 - 1.50				
			Sample Type	Soil/Solid (S)	Soil/Solid (S)				
			Date Sampled	07/12/2020	07/12/2020				
			Sample Time	.	.				
			Date Received	08/12/2020	08/12/2020				
			SDG Ref	201208-47	201208-47				
			Lab Sample No.(s)	23383621	23383628				
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		88.2 @	131 @				
Aliphatics >C5-C6	<10 µg/kg	TM089		<10 @	23 @				
Aliphatics >C6-C8	<10 µg/kg	TM089		<10 @	78.7 @				
Aliphatics >C8-C10	<10 µg/kg	TM089		<10 @	2510 @				
Aliphatics >C10-C12	<1000 µg/kg	TM414		<1000	70600				
Aliphatics >C12-C16	<1000 µg/kg	TM414		<1000	296000				
Aliphatics >C16-C21	<1000 µg/kg	TM414		3000	282000				
Aliphatics >C21-C35	<1000 µg/kg	TM414		28200	1660000				
Aliphatics >C35-C44	<1000 µg/kg	TM414		<1000	557000				
Total Aliphatics >C10-C44	<5000 µg/kg	TM414		31800	2870000				
Total Aliphatics & Aromatics >C10-C44	<10000 µg/kg	TM414		146000	3100000				
Aromatics >EC5-EC7	<10 µg/kg	TM089		<10 @	14.5 @				
Aromatics >EC7-EC8	<10 µg/kg	TM089		<10 @	<10 @				
Aromatics >EC8-EC10	<10 µg/kg	TM089		<10 @	1670 @				
Aromatics > EC10-EC12	<1000 µg/kg	TM414		<1000	3470				
Aromatics > EC12-EC16	<1000 µg/kg	TM414		<1000	45100				
Aromatics > EC16-EC21	<1000 µg/kg	TM414		<1000	49600				
Aromatics > EC21-EC35	<1000 µg/kg	TM414		70200	133000				
Aromatics >EC35-EC44	<1000 µg/kg	TM414		43500	3830				
Aromatics > EC40-EC44	<1000 µg/kg	TM414		4570	<1000				
Total Aromatics > EC10-EC44	<5000 µg/kg	TM414		114000	235000				
Total Aliphatics & Aromatics >C5-C44	<10000 µg/kg	TM414		146000	3110000				
Total Aliphatics >C5-C10	<50 µg/kg	TM089		<50 @	2610 @				
Total Aromatics >EC5-EC10	<50 µg/kg	TM089		<50 @	1690 @				
GRO >C5-C10	<20 µg/kg	TM089		<20 @	4300 @				

Validated

CERTIFICATE OF ANALYSIS

SDG:	201208-47	**Client Reference:**	P18-669	**Report Number:**	583654
Location:	Llanwern	**Order Number:**		**Superseded Report:**	580121

VOC MS (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	U37-1	U37-2	V35-1	V35-2	V37-1	V37-2
			Depth (m)	0.30 - 0.30	1.50 - 1.50	0.20 - 0.20	1.50 - 1.50	0.50 - 0.50	1.50 - 1.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	07/12/2020	07/12/2020	07/12/2020	07/12/2020	07/12/2020	07/12/2020
			Sample Time	.	.	.	.	.	.
			Date Received	08/12/2020	08/12/2020	08/12/2020	08/12/2020	08/12/2020	08/12/2020
			SDG Ref	201208-47	201208-47	201208-47	201208-47	201208-47	201208-47
			Lab Sample No.(s)	23383659	23383668	23383674	23383679	23383638	23383648
			AGS Reference						
Dibromofluoromethane**	%	TM116		110 @	109 @	112 @	110 @	108 @	109 @
Toluene-d8**	%	TM116		95.8 @	96.2 @	91.9 @	94.2 @	96.9 @	95.8 @
4-Bromofluorobenzene**	%	TM116		84.3 @	89.9 @	82.6 @	86.6 @	93.1 @	84.9 @
Methyl Tertiary Butyl Ether	<10 µg/kg	TM116		<200 @ M	<200 @ M	<200 @ M	<200 @ M	<200 @ M	<200 @ M
Benzene	<9 µg/kg	TM116		<180 @ M	<180 @ M	645 @ M	371 @ M	<180 @ M	<180 @ M
Toluene	<7 µg/kg	TM116		<140 @ M	<140 @ M	<140 @ M	<140 @ M	<140 @ M	<140 @ M
Ethylbenzene	<4 µg/kg	TM116		<80 @ M	<80 @ M	<80 @ M	231 @ M	<80 @ M	<80 @ M
p/m-Xylene	<10 µg/kg	TM116		<200 @ #	<200 @ #	<200 @ #	554 @ #	<200 @ #	<200 @ #
o-Xylene	<10 µg/kg	TM116		<200 @ M	<200 @ M	<200 @ M	<200 @ M	<200 @ M	<200 @ M
Naphthalene	<13 µg/kg	TM116		<260 M	<260 M	409 M	20100 M	<13 M	<260 M
Sum of Detected Xylenes	<0.02 mg/kg	TM116		<0.4 @	<0.4 @	<0.4 @	0.554 @	<0.4 @	<0.4 @
Sum of BTEX	<40 µg/kg	TM116		<800 @	<800 @	<800 @	1160 @	<800 @	<800 @

Validated

CERTIFICATE OF ANALYSIS

SDG:	201208-47	**Client Reference:**	P18-669	**Report Number:**	583654
Location:	Llanwern	**Order Number:**		**Superseded Report:**	580121

VOC MS (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	W37-1	W37-2
			Depth (m)	0.50 - 0.50	1.50 - 1.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	07/12/2020	07/12/2020
			Sample Time	.	.
			Date Received	08/12/2020	08/12/2020
			SDG Ref	201208-47	201208-47
			Lab Sample No.(s)	23383621	23383628
			AGS Reference		
Dibromofluoromethane**	%	TM116		111 @	108 @
Toluene-d8**	%	TM116		96.6 @	97 @
4-Bromofluorobenzene**	%	TM116		89.7 @	93 @
Methyl Tertiary Butyl Ether	<10 µg/kg	TM116		<200 @ M	<200 @ M
Benzene	<9 µg/kg	TM116		<180 @ M	<180 @ M
Toluene	<7 µg/kg	TM116		<140 @ M	<140 @ M
Ethylbenzene	<4 µg/kg	TM116		<80 @ M	<80 @ M
p/m-Xylene	<10 µg/kg	TM116		<200 @ #	<200 @ #
o-Xylene	<10 µg/kg	TM116		<200 @ M	<200 @ M
Naphthalene	<13 µg/kg	TM116		<13 M	<13 M
Sum of Detected Xylenes	<0.02 mg/kg	TM116		<0.4 @	<0.4 @
Sum of BTEX	<40 µg/kg	TM116		<800 @	<800 @

CERTIFICATE OF ANALYSIS

SDG:	201208-47	**Client Reference:**	P18-669	**Report Number:**	583654
Location:	Llanwern	**Order Number:**		**Superseded Report:**	580121

Asbestos Identification - Solid Samples

Results Legend

#	ISO17025 accredited.
M	*m*CERTS accredited.
*	Subcontracted test.
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthophyllite	Fibrous Tremolite	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	U37-1 0.30 - 0.30 SOLID 07/12/2020 00:00:00 08/12/2020 09:00:00 201208-47 23383659 TM048	11/12/2020	Barbara Urbanek-Walsh	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	V35-1 0.20 - 0.20 SOLID 07/12/2020 00:00:00 08/12/2020 09:00:00 201208-47 23383674 TM048	11/12/2020	James Richards	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	V37-2 1.50 - 1.50 SOLID 07/12/2020 00:00:00 08/12/2020 09:00:00 201208-47 23383648 TM048	14/12/2020	Marcin Magdziarek	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	W37-1 0.50 - 0.50 SOLID 07/12/2020 00:00:00 08/12/2020 09:00:00 201208-47 23383621 TM048	11/12/2020	James Richards	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected

CERTIFICATE OF ANALYSIS

SDG:	201208-47	**Client Reference:**	P18-669	**Report Number:**	583654
Location:	Llanwern	**Order Number:**		**Superseded Report:**	580121

Table of Results - Appendix

Method No	Reference	Description
PM024	Modified BS 1377	Soil preparation including homogenisation, moisture screens of soils for Asbestos Containing Material
TM024	Method 4500A & B, AWWA/APHA, 20th Ed., 1999	Determination of Exchangeable Ammonium and Ammoniacal Nitrogen as N by titration on solids
TM048	HSG 248, Asbestos: The analysts' guide for sampling, analysis and clearance procedures	Identification of Asbestos in Bulk Material
TM062 (S)	National Grid Property Holdings Methods for the Collection & Analysis of Samples from National Grid Sites version 1 Sec 3.9	Determination of Phenols in Soils by HPLC
TM089	Modified: US EPA Methods 8020 & 602	Determination of Gasoline Range Hydrocarbons (GRO) by Headspace GC-FID (C4-C12)
TM116	Modified: US EPA Method 8260, 8120, 8020, 624, 610 & 602	Determination of Volatile Organic Compounds by Headspace / GC-MS
TM132	In - house Method	ELTRA CS800 Operators Guide
TM133	BS 1377: Part 3 1990;BS 6068-2.5	Determination of pH in Soil and Water using the GLpH pH Meter
TM153	Method 4500A,B,C, I, M AWWA/APHA, 20th Ed., 1999	Determination of Total Cyanide, Free (Easily Liberatable) Cyanide and Thiocyanate using the Skalar SANS+ System Segmented Flow Analyser
TM181	US EPA Method 6010B	Determination of Routine Metals in Soil by iCap 6500 Duo ICP-OES
TM218	Shaker extraction - EPA method 3546.	The determination of PAH in soil samples by GC-MS
TM414	Analysis of Petroleum Hydrocarbons in Environmental Media – Total Petroleum Hydrocarbon Criteria	Determination of Speciated Extractable Petroleum Hydrocarbons in Soils by GCxGC-FID

NA = not applicable.

Chemical testing (unless subcontracted) performed at ALS Life Sciences Ltd Hawarden (Method codes TM) or ALS Life Sciences Ltd Aberdeen (Method codes S).

CERTIFICATE OF ANALYSIS

SDG:	201208-47	**Client Reference:**	P18-669	**Report Number:**	583654
Location:	Llanwern	**Order Number:**		**Superseded Report:**	580121

Test Completion Dates

Lab Sample No(s)	23383659	23383668	23383674	23383679	23383638	23383648	23383621	23383628
Customer Sample Ref.	U37-1	U37-2	V35-1	V35-2	V37-1	V37-2	W37-1	W37-2
AGS Ref.								
Depth	0.30 - 0.30	1.50 - 1.50	0.20 - 0.20	1.50 - 1.50	0.50 - 0.50	1.50 - 1.50	0.50 - 0.50	1.50 - 1.50
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
Ammonium Soil by Titration	15-Dec-2020	14-Dec-2020	14-Dec-2020	15-Dec-2020	15-Dec-2020	14-Dec-2020	14-Dec-2020	14-Dec-2020
Asbestos ID in Solid Samples	11-Dec-2020		11-Dec-2020			14-Dec-2020	11-Dec-2020	
Cyanide Comp/Free/Total/Thiocyanate	14-Dec-2020	11-Dec-2020	14-Dec-2020	11-Dec-2020	14-Dec-2020	14-Dec-2020	14-Dec-2020	14-Dec-2020
EPH CWG GC (S)	14-Jan-2021	11-Jan-2021	14-Jan-2021	14-Jan-2021	07-Jan-2021	07-Jan-2021	07-Jan-2021	07-Jan-2021
GRO by GC-FID (S)	19-Jan-2021	19-Jan-2021	19-Jan-2021	19-Jan-2021	18-Jan-2021	19-Jan-2021	18-Jan-2021	19-Jan-2021
Metals in solid samples by OES	11-Dec-2020	11-Dec-2020	15-Dec-2020	14-Dec-2020	15-Dec-2020	15-Dec-2020	15-Dec-2020	11-Dec-2020
PAH by GCMS	15-Dec-2020	11-Dec-2020	11-Dec-2020	11-Dec-2020	11-Dec-2020	11-Dec-2020	11-Dec-2020	11-Dec-2020
pH	10-Dec-2020	10-Dec-2020	10-Dec-2020	10-Dec-2020	10-Dec-2020	10-Dec-2020	10-Dec-2020	10-Dec-2020
Phenols by HPLC (S)	11-Dec-2020	11-Dec-2020	14-Dec-2020	14-Dec-2020	14-Dec-2020	14-Dec-2020	14-Dec-2020	11-Dec-2020
Sample description	09-Dec-2020	09-Dec-2020	09-Dec-2020	09-Dec-2020	09-Dec-2020	09-Dec-2020	09-Dec-2020	09-Dec-2020
Total Organic Carbon	14-Dec-2020	14-Dec-2020	14-Dec-2020	14-Dec-2020	15-Dec-2020	15-Dec-2020	15-Dec-2020	14-Dec-2020
TPH CWG GC (S)	19-Jan-2021	19-Jan-2021	19-Jan-2021	19-Jan-2021	18-Jan-2021	19-Jan-2021	18-Jan-2021	19-Jan-2021
VOC MS (S)	15-Jan-2021	15-Jan-2021	15-Jan-2021	15-Jan-2021	15-Jan-2021	15-Jan-2021	15-Jan-2021	15-Jan-2021

Appendix

General

1. Results are expressed on a dry weight basis (dried at 35ºC) for all soil analyses except for the following: NRA and CEN Leach tests, flash point LOI, pH, ammonium as NH4 by the BRE method, VOC TICs and SVOC TICs.

2. If sufficient sample is received a sub sample will be retained free of charge for 30 days after analysis is completed (e-mailed) for all sample types unless the sample is destroyed on testing. The prepared soil sub sample that is analysed for asbestos will be retained for a period of 6 months after the analysis date. All bulk samples will be retained for a period of 6 months after the analysis date. All samples received and not scheduled will be disposed of one month after the date of receipt unless we are instructed to the contrary. Once the initial period has expired, a storage charge will be applied for each month or part thereof until the client cancels the request for sample storage. ALS reserve the right to charge for samples received and stored but not analysed.

3. With respect to turnaround, we will always endeavour to meet client requirements wherever possible, but turnaround times cannot be absolutely guaranteed due to so many variables beyond our control.

4. We take responsibility for any test performed by sub-contractors (marked with an asterisk). We endeavour to use UKAS/MCERTS Accredited Laboratories, who either complete a quality questionnaire or are audited by ourselves. For some determinands there are no UKAS/MCERTS Accredited Laboratories, in this instance a laboratory with a known track record will be utilised.

5. If no separate volatile sample is supplied by the client, or if a headspace or sediment is present in the volatile sample, the integrity of the data may be compromised. This will be flagged up as an invalid VOC on the test schedule and the result marked as deviating on the test certificate.

6. NDP - No determination possible due to insufficient/unsuitable sample.

7. Results relate only to the items tested.

8. LoDs (Limit of Detection) for wet tests reported on a dry weight basis are not corrected for moisture content.

9. **Surrogate recoveries** - Surrogates are added to your sample to monitor recovery of the test requested. A % recovery is reported, results are not corrected for the recovery measured. Typical recoveries for organics tests are 70-130%. Recoveries in soils are affected by organic rich or clay rich matrices. Waters can be affected by remediation fluids or high amounts of sediment. Test results are only ever reported if all of the associated quality checks pass; it is assumed that all recoveries outside of the values above are due to matrix affect.

10. Stones/debris are not routinely removed. We always endeavour to take a representative sub sample from the received sample.

11. In certain circumstances the method detection limit may be elevated due to the sample being outside the calibration range. Other factors that may contribute to this include possible interferences. In both cases the sample would be diluted which would cause the method detection limit to be raised.

12. Mercury results quoted on soils will not include volatile mercury as the analysis is performed on a dried and crushed sample.

13. For leachate preparations other than Zero Headspace Extraction (ZHE) volatile loss may occur.

14. For the BSEN 12457-3 two batch process to allow the cumulative release to be calculated, the volume of the leachate produced is measured and filtered for all tests. We therefore cannot carry out any unfiltered analysis. The tests affected include volatiles GCFID/GCMS and all subcontracted analysis.

15. Analysis and identification of specific compounds using GCFID is by retention time only, and we routinely calibrate and quantify for benzene, toluene, ethylbenzenes and xylenes (BTEX). For total volatiles in the C5-C12 range, the total area of the chromatogram is integrated and expressed as ug/kg or ug/l. Although this analysis is commonly used for the quantification of gasoline range organics (GRO), the system will also detect other compounds such as chlorinated solvents, and this may lead to a falsely high result with respect to hydrocarbons only. It is not possible to specifically identify these non-hydrocarbons, as standards are not routinely run for any other compounds, and for more definitive identification, volatiles by GCMS should be utilised.

16. We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample. Other coarse granular material such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

17. **Tentatively Identified Compounds (TICs)** are non-target peaks in VOC and SVOC analysis. All non-target peaks detected with a concentration above the LoD are subjected to a mass spectral library search. Non-target peaks with a library search confidence of >75% are reported based on the best mass spectral library match. When a non-target peak with a library search confidence of <75% is detected it is reported as "mixed hydrocarbons". Non-target compounds identified from the scan data are semi-quantified relative to one of the deuterated internal standards, under the same chromatographic conditions as the target compounds. This result is reported as a semi-quantitative value and reported as Tentatively Identified Compounds (TICs). TICs are outside the scope of UKAS accreditation and are not moisture corrected.

18. **Sample Deviations**

If a sample is classed as deviated then the associated results may be compromised.

1	**Container with Headspace provided for volatiles analysis**
2	**Incorrect container received**
3	**Deviation from method**
4	**Matrix interference**
♦	**Sample holding time exceeded in laboratory**
@	**Sample holding time exceeded due to late arrival of instructions or samples**
§	**Sampled on date not provided**

19. **Asbestos**

When requested, the individual sub sample scheduled will be analysed in house for the presence of asbestos fibres and asbestos containing material by our documented in house method TM048 based on HSG 248 (2005), which is accredited to ISO17025. If a specific asbestos fibre type is not found this will be reported as "Not detected". If no asbestos fibre types are found all will be reported as "Not detected" and the sub sample analysed deemed to be clear of asbestos. If an asbestos fibre type is found it will be reported as detected (for each fibre type found). Testing can be carried out on asbestos positive samples, but, due to Health and Safety considerations, may be replaced by alternative tests or reported as No Determination Possible (NDP). The quantity of asbestos present is not determined unless specifically requested.

Identification of Asbestos in Bulk Materials & Soils

The results for identification of asbestos in bulk materials are obtained from supplied bulk materials which have been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

The results for identification of asbestos in soils are obtained from a homogenised sub sample which has been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

Asbestos Type	Common Name
Chrysotile	White Asbestos
Amosite	Brown Asbestos
Crocidolite	Blue Asbestos
Fibrous Actinolite	-
Fibrous Anthophyllite	-
Fibrous Tremolite	-

Visual Estimation Of Fibre Content

Estimation of fibre content is not permitted as part of our UKAS accredited test other than: - Trace - Where only one or two asbestos fibres were identified.

Respirable Fibres

Respirable fibres are defined as fibres of <3 µm diameter, longer than 5 µm and with aspect ratios of at least 3:1 that can be inhaled into the lower regions of the lung and are generally acknowledged to be most important predictor of hazard and risk for cancers of the lung.
Standing Committee of Analysts, *The Quantification of Asbestos in Soil (2017).*

Further guidance on typical asbestos fibre content of manufactured products can be found in HSG 264.

The identification of asbestos containing materials and soils falls within our schedule of tests for which we hold UKAS accreditation, however opinions, interpretations and all other information contained in the report are outside the scope of UKAS accreditation.

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Website: www.alsenvironmental.co.uk

Rodgers Leask
Office 225
2430/2440
Aztec West
Almondsbury
Bristol
BS32 4QA

Attention: Elliot Thomas

CERTIFICATE OF ANALYSIS

Date of report Generation:	19 January 2021
Customer:	Rodgers Leask
Sample Delivery Group (SDG):	201210-141
Your Reference:	P18-669
Location:	Llanwern
Report No:	583592

This report has been revised and directly supersedes 582538 in its entirety.

We received 20 samples on Thursday December 10, 2020 and 20 of these samples were scheduled for analysis which was completed on Tuesday January 19, 2021. Accredited laboratory tests are defined within the report, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation.

Should this report require incorporation into client reports, it must be used in its entirety and not simply with the data sections alone.

Chemical testing (unless subcontracted) performed at ALS Life Sciences Ltd Hawarden (Method codes TM) or ALS Life Sciences Ltd Aberdeen (Method codes S).

All sample data is provided by the customer. The reported results relate to the sample supplied, and on the basis that this data is correct.
Incorrect sampling dates and/or sample information will affect the validity of results.
The customer is not permitted to reproduce this report except in full without the approval of the laboratory.

Approved By:

Sonia McWhan

Operations Manager

CERTIFICATE OF ANALYSIS

SDG:	201210-141	**Client Reference:**	P18-669	**Report Number:**	583592
Location:	Llanwern	**Order Number:**		**Superseded Report:**	582538

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
23406646	N37-1		0.30 - 0.30	09/12/2020
23406658	N37-2		1.50 - 1.50	09/12/2020
23406624	O37-1		0.50 - 0.50	09/12/2020
23406630	O37-2		1.40 - 1.40	09/12/2020
23406638	O37-3		2.90 - 2.90	09/12/2020
23406590	P36-1		0.10 - 0.10	09/12/2020
23406594	P36-2		1.10 - 1.10	09/12/2020
23406598	P36-3		2.40 - 2.40	09/12/2020
23406603	P37-1		0.40 - 0.40	09/12/2020
23406609	P37-2		1.50 - 1.50	09/12/2020
23406620	P37-3		2.70 - 2.70	09/12/2020
23406694	Q37-1		0.30 - 0.30	08/12/2020
23406701	Q37-2		1.20 - 1.20	08/12/2020
23406709	Q37-3		3.00 - 3.00	08/12/2020
23406670	R36-1		0.10 - 0.10	08/12/2020
23406678	R36-2		0.70 - 0.70	08/12/2020
23406688	R36-3		2.00 - 2.00	08/12/2020
23406583	S35-1		0.40 - 0.40	08/12/2020
23406652	S35-2		1.40 - 1.40	08/12/2020
23406664	S35-3		2.20 - 2.20	08/12/2020

Only received samples which have had analysis scheduled will be shown on the following pages.

Validated

CERTIFICATE OF ANALYSIS

SDG: 201210-141 **Client Reference:** P18-669 **Report Number:** 583592
Location: Llanwern **Order Number:** **Superseded Report:** 582538

Results Legend

X Test

N No Determination Possible

Sample Types -

S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

			Lab Sample No(s)	Customer Sample Reference	AGS Reference	Depth (m)	Container	Sample Type
			23406646	N37-1		0.30 - 0.30	1kg TUB with Handle (ALE260)	S
			23406646	N37-1		0.30 - 0.30	250g Amber Jar (ALE210)	S
			23406646	N37-1		0.30 - 0.30	60g VOC (ALE215)	S
			23406658	N37-2		1.50 - 1.50	250g Amber Jar (ALE210)	S
			23406658	N37-2		1.50 - 1.50	60g VOC (ALE215)	S
			23406624	O37-1		0.50 - 0.50	250g Amber Jar (ALE210)	S
			23406624	O37-1		0.50 - 0.50	60g VOC (ALE215)	S
			23406630	O37-2		1.40 - 1.40	250g Amber Jar (ALE210)	S
			23406630	O37-2		1.40 - 1.40	60g VOC (ALE215)	S
			23406638	O37-3		2.90 - 2.90	1kg TUB with Handle (ALE260)	S
			23406638	O37-3		2.90 - 2.90	250g Amber Jar (ALE210)	S
			23406638	O37-3		2.90 - 2.90	60g VOC (ALE215)	S
			23406590	P36-1		0.10 - 0.10	250g Amber Jar (ALE210)	S
			23406590	P36-1		0.10 - 0.10	60g VOC (ALE215)	S
			23406594	P36-2		1.10 - 1.10	1kg TUB with Handle (ALE260)	S
			23406594	P36-2		1.10 - 1.10	250g Amber Jar (ALE210)	S
			23406594	P36-2		1.10 - 1.10	60g VOC (ALE215)	S
			23406598	P36-3		2.40 - 2.40	250g Amber Jar (ALE210)	S
			23406598	P36-3		2.40 - 2.40	60g VOC (ALE215)	S
Ammonium Soil by Titration	All	NDPs: 0 Tests: 20		X				
Asbestos ID in Solid Samples	All	NDPs: 0 Tests: 10	X					
Asbestos Quantification - Full	All	NDPs: 0 Tests: 1						
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 20		X				
EPH CWG GC (S)	All	NDPs: 0 Tests: 20		X				
GRO by GC-FID (S)	All	NDPs: 0 Tests: 20			X			
Metals in solid samples by OES	All	NDPs: 0 Tests: 20		X				
PAH by GCMS	All	NDPs: 0 Tests: 20		X				
pH	All	NDPs: 0 Tests: 20		X				
Phenols by HPLC (S)	All	NDPs: 0 Tests: 20		X				
Sample description	All	NDPs: 0 Tests: 20		X				
Total Organic Carbon	All	NDPs: 0 Tests: 20		X				
TPH CWG GC (S)	All	NDPs: 0 Tests: 20		X				
VOC MS (S)	All	NDPs: 0 Tests: 20			X			

23406678	R36-2		0.70 - 0.70	60g VOC (ALE215)	S						X								X
				250g Amber Jar (ALE210)	S	X			X	X		X	X	X	X	X	X	X	
23406670	R36-1		0.10 - 0.10	60g VOC (ALE215)	S						X								X
				250g Amber Jar (ALE210)	S	X			X	X		X	X	X	X	X	X	X	
				1kg TUB with Handle (ALE260)	S		X												
23406709	Q37-3		3.00 - 3.00	60g VOC (ALE215)	S						X								X
				250g Amber Jar (ALE210)	S	X			X	X		X	X	X	X	X	X	X	
				1kg TUB with Handle (ALE260)	S		X												
23406701	Q37-2		1.20 - 1.20	60g VOC (ALE215)	S						X								X
				250g Amber Jar (ALE210)	S	X			X	X		X	X	X	X	X	X	X	
23406694	Q37-1		0.30 - 0.30	60g VOC (ALE215)	S						X								X
				250g Amber Jar (ALE210)	S	X			X	X		X	X	X	X	X	X	X	
				1kg TUB with Handle (ALE260)	S		X												
23406620	P37-3		2.70 - 2.70	60g VOC (ALE215)	S						X								X
				250g Amber Jar (ALE210)	S	X			X	X		X	X	X	X	X	X	X	
				1kg TUB with Handle (ALE260)	S		X												
23406609	P37-2		1.50 - 1.50	60g VOC (ALE215)	S						X								X
				250g Amber Jar (ALE210)	S	X			X	X		X	X	X	X	X	X	X	
23406603	P37-1		0.40 - 0.40	60g VOC (ALE215)	S						X								X
				250g Amber Jar (ALE210)	S	X			X	X		X	X	X	X	X	X	X	
				1kg TUB with Handle (ALE260)	S		X	X											

Validated

CERTIFICATE OF ANALYSIS

SDG:	201210-141	**Client Reference:**	P18-669	**Report Number:**	583592
Location:	Llanwern	**Order Number:**		**Superseded Report:**	582538

Results Legend

X Test

N No Determination Possible

Sample Types -
S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

Lab Sample No(s)			23406688			23406583			23406652		23406664
Customer Sample Reference			R36-3			S35-1			S35-2		S35-3
AGS Reference											
Depth (m)			2.00 - 2.00			0.40 - 0.40			1.40 - 1.40		2.20 - 2.20
Container			1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)
Sample Type			S	S	S	S	S	S	S	S	S	S
Ammonium Soil by Titration	All	NDPs: 0 Tests: 20		X			X		X		X	
Asbestos ID in Solid Samples	All	NDPs: 0 Tests: 10	X			X						
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 20		X			X		X		X	
EPH CWG GC (S)	All	NDPs: 0 Tests: 20		X			X		X		X	
GRO by GC-FID (S)	All	NDPs: 0 Tests: 20			X			X		X		X
Metals in solid samples by OES	All	NDPs: 0 Tests: 20		X			X		X		X	
PAH by GCMS	All	NDPs: 0 Tests: 20		X			X		X		X	
pH	All	NDPs: 0 Tests: 20		X			X		X		X	
Phenols by HPLC (S)	All	NDPs: 0 Tests: 20		X			X		X		X	
Sample description	All	NDPs: 0 Tests: 20		X			X		X		X	
Total Organic Carbon	All	NDPs: 0 Tests: 20		X			X		X		X	
TPH CWG GC (S)	All	NDPs: 0 Tests: 20		X			X		X		X	
VOC MS (S)	All	NDPs: 0 Tests: 20			X			X		X		X

CERTIFICATE OF ANALYSIS

SDG:	201210-141	**Client Reference:**	P18-669	**Report Number:**	583592
Location:	Llanwern	**Order Number:**		**Superseded Report:**	582538

Sample Descriptions

Grain Sizes

very fine	<0.063mm	**fine**	0.063mm - 0.1mm	**medium**	0.1mm - 2mm	**coarse**	2mm - 10mm	**very coarse**	>10mm

Lab Sample No(s)	Customer Sample Ref.	Depth (m)	Colour	Description	Inclusions	Inclusions 2
23406646	N37-1	0.30 - 0.30	Dark Brown	Loamy Sand	Stones	None
23406658	N37-2	1.50 - 1.50	Dark Brown	Sand	Stones	None
23406624	O37-1	0.50 - 0.50	Dark Brown	Clay Loam	Stones	Brick
23406630	O37-2	1.40 - 1.40	Dark Brown	Loamy Sand	Stones	None
23406638	O37-3	2.90 - 2.90	Dark Brown	Silt Loam	Stones	Stones
23406590	P36-1	0.10 - 0.10	Dark Brown	Sandy Silt Loam	Stones	Vegetation
23406594	P36-2	1.10 - 1.10	Dark Brown	Sandy Loam	Stones	None
23406598	P36-3	2.40 - 2.40	Dark Brown	Sand	Stones	None
23406603	P37-1	0.40 - 0.40	Dark Brown	Loamy Sand	Stones	Vegetation
23406609	P37-2	1.50 - 1.50	Dark Brown	Sandy Silt Loam	Stones	None
23406620	P37-3	2.70 - 2.70	Dark Brown	Stone/Soil	Stones	Vegetation
23406694	Q37-1	0.30 - 0.30	Dark Brown	Loamy Sand	Stones	None
23406701	Q37-2	1.20 - 1.20	Dark Brown	Sand	Stones	Vegetation
23406709	Q37-3	3.00 - 3.00	Dark Brown	N/A	Stones	Vegetation
23406670	R36-1	0.10 - 0.10	Grey	Stone/Soil	Stones	Concrete/Aggregate
23406678	R36-2	0.70 - 0.70	Dark Brown	N/A	Stones	Vegetation
23406688	R36-3	2.00 - 2.00	Dark Brown	Loamy Sand	Stones	Concrete/Aggregate
23406583	S35-1	0.40 - 0.40	Dark Brown	Loamy Sand	Stones	Concrete/Aggregate
23406652	S35-2	1.40 - 1.40	Dark Brown	Loamy Sand	Stones	Concrete/Aggregate
23406664	S35-3	2.20 - 2.20	Dark Brown	Sand	Stones	Concrete/Aggregate

These descriptions are only intended to act as a cross check if sample identities are questioned, and to provide a log of sample matrices with respect to MCERTS validation. They are not intended as full geological descriptions.

We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally ocurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample.

Other coarse granular materials such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

Validated

CERTIFICATE OF ANALYSIS

SDG:	201210-141	**Client Reference:**	P18-669	**Report Number:**	583592
Location:	Llanwern	**Order Number:**		**Superseded Report:**	582538

Results Legend	
#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	N37-1	N37-2	O37-1	O37-2	O37-3	P36-1
			Depth (m)	0.30 - 0.30	1.50 - 1.50	0.50 - 0.50	1.40 - 1.40	2.90 - 2.90	0.10 - 0.10
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	09/12/2020	09/12/2020	09/12/2020	09/12/2020	09/12/2020	09/12/2020
			Sample Time	.	.	.	.	.	.
			Date Received	10/12/2020	10/12/2020	10/12/2020	10/12/2020	10/12/2020	10/12/2020
			SDG Ref	201210-141	201210-141	201210-141	201210-141	201210-141	201210-141
			Lab Sample No.(s)	23406646	23406658	23406624	23406630	23406638	23406590
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		4.4	9	10	6.2	1.4	14
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	<12 M	<12 M	<12 M	<12 M	<12 M
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M	0.0232 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M
Soil Organic Matter (SOM)	<0.35 %	TM132		2.52 #	3.48 #	3.05 #	5.59 #	0.562 #	3.84 #
pH	1 pH Units	TM133		12 M	11.8 M	8.71 M	11.3 M	10.6 M	8.68 M
Cyanide, Total	<1 mg/kg	TM153		1.07 M	2.06 M	<1 M	<1 M	<1 M	<1 M
Arsenic	<0.6 mg/kg	TM181		5.1 M	<6 M	8.56 M	17.1 M	6.46 M	7.53 M
Cadmium	<0.02 mg/kg	TM181		<0.02 M	1.96 M	0.2 M	3.38 M	<0.2 M	1.09 M
Chromium	<0.9 mg/kg	TM181		400 M	355 M	210 M	449 M	59 M	10.4 M
Copper	<1.4 mg/kg	TM181		9.6 M	16.8 M	12.6 M	153 M	<14 M	16.2 M
Iron	<1000 mg/kg	TM181		147000 #	213000 #	62300 #	223000 #	300000 #	77800 #
Lead	<0.7 mg/kg	TM181		50.1 M	308 M	93.2 M	510 M	23.4 M	189 M
Manganese	<0.13 mg/kg	TM181		22400 M	28800 M	13200 M	24400 M	13300 M	2080 M
Mercury	<0.14 mg/kg	TM181		<0.14 M	<1.4 M	<0.14 M	<1.4 M	<1.4 M	<0.14 M
Nickel	<0.2 mg/kg	TM181		8.62 M	19.1 M	25.5 M	273 M	16.6 M	27.9 M
Selenium	<1 mg/kg	TM181		6.73 #	14.1 #	7.21 #	10.1 #	<10 #	<1 #
Vanadium	<0.2 mg/kg	TM181		340 #	441 #	192 #	304 #	219 #	58.4 #
Zinc	<1.9 mg/kg	TM181		295 M	1400 M	339 M	1990 M	62.2 M	1110 M

Validated

CERTIFICATE OF ANALYSIS

SDG:	201210-141	**Client Reference:**	P18-669	**Report Number:**	583592
Location:	Llanwern	**Order Number:**		**Superseded Report:**	582538

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	P36-2	P36-3	P37-1	P37-2	P37-3	Q37-1
			Depth (m)	1.10 - 1.10	2.40 - 2.40	0.40 - 0.40	1.50 - 1.50	2.70 - 2.70	0.30 - 0.30
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	09/12/2020	09/12/2020	09/12/2020	09/12/2020	09/12/2020	08/12/2020
			Sample Time	.	.	.	.	.	.
			Date Received	10/12/2020	10/12/2020	10/12/2020	10/12/2020	10/12/2020	10/12/2020
			SDG Ref	201210-141	201210-141	201210-141	201210-141	201210-141	201210-141
			Lab Sample No.(s)	23406594	23406598	23406603	23406609	23406620	23406694
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		5.1	4.8	2.2	13	1.6	8.5
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	<12 M	<12 M	<12 M	<12 #	<12 M
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 #	<0.01 M
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M	0.0102 #	<0.01 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 #	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 #	<0.035 M
Soil Organic Matter (SOM)	<0.35 %	TM132		0.822 #	0.533 #	1.46 #	13.1 #	0.476 #	3.28 #
pH	1 pH Units	TM133		12 M	12.1 M	9.86 M	11.5 M	10.3 #	9.5 M
Cyanide, Total	<1 mg/kg	TM153		<1 M	<1 M	<1 M	2.16 M	<1 #	<1 M
Arsenic	<0.6 mg/kg	TM181		3.71 M	<6 M	<6 M	13.7 M	3.85 #	7.77 M
Cadmium	<0.02 mg/kg	TM181		<0.02 M	<0.2 M	0.316 M	8.29 M	<0.02 #	1.2 M
Chromium	<0.9 mg/kg	TM181		60.6 M	595 M	27.3 M	<9 M	263 #	26.3 M
Copper	<1.4 mg/kg	TM181		9 M	19.4 M	32 M	56.1 M	12.5 #	28.2 M
Iron	<1000 mg/kg	TM181		83500 #	236000 #	188000 #	425000 #	44800 #	159000 #
Lead	<0.7 mg/kg	TM181		27.5 M	27.1 M	144 M	1740 M	15.7 #	337 M
Manganese	<0.13 mg/kg	TM181		3160 M	29200 M	5120 M	5750 M	10200 #	2290 M
Mercury	<0.14 mg/kg	TM181		<0.14 M	<1.4 M	<1.4 M	1.72 M	<0.14 #	<1.4 M
Nickel	<0.2 mg/kg	TM181		10 M	21.1 M	30.7 M	102 M	17.4 #	37.3 M
Selenium	<1 mg/kg	TM181		<1 #	13.4 #	<10 #	<10 #	5.93 #	<10 #
Vanadium	<0.2 mg/kg	TM181		57.9 #	640 #	74.6 #	312 #	234 #	29.7 #
Zinc	<1.9 mg/kg	TM181		80 M	68.7 M	516 M	3940 M	62.8 #	1200 M
Asbestos Quantification - Gravimetric - %	<0.001 %	TM304				<0.001 #			
Asbestos Quantification - PCOM Evaluation - %	<0.001 %	TM304				<0.001 #			
Additional Asbestos Components (Using TM048)		TM304				None #			
Analysts Comments		TM304				N/C			
Asbestos Quantification - Total - %	<0.001 %	TM304				<0.001 #			

Validated

CERTIFICATE OF ANALYSIS

SDG:	201210-141	**Client Reference:**	P18-669	**Report Number:**	583592
Location:	Llanwern	**Order Number:**		**Superseded Report:**	582538

Results Legend	
#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	Q37-2	Q37-3	R36-1	R36-2	R36-3	S35-1
			Depth (m)	1.20 - 1.20	3.00 - 3.00	0.10 - 0.10	0.70 - 0.70	2.00 - 2.00	0.40 - 0.40
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	08/12/2020	08/12/2020	08/12/2020	08/12/2020	08/12/2020	08/12/2020
			Sample Time	.	.	.	.	.	.
			Date Received	10/12/2020	10/12/2020	10/12/2020	10/12/2020	10/12/2020	10/12/2020
			SDG Ref	201210-141	201210-141	201210-141	201210-141	201210-141	201210-141
			Lab Sample No.(s)	23406701	23406709	23406670	23406678	23406688	23406583
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		3.9	0.03	4.6	0	2.4	1.7
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	<12 M	<12 M	<12 M	<12 M	<12 M
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 #	<0.01 M	<0.01 #	0.0103 M	<0.01 M
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 #	<0.01 M	<0.01 #	<0.01 M	<0.01 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 #	<0.015 M	<0.015 #	<0.015 M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 M	<0.035 M	<0.035 #	<0.035 M	<0.035 M
Soil Organic Matter (SOM)	<0.35 %	TM132		6.43 #	0.767 #	4.74 #	9.53 #	3.98 #	3.03 #
pH	1 pH Units	TM133		8.15 M	10.9 #	12 M	12.4 #	12 M	12.6 M
Cyanide, Total	<1 mg/kg	TM153		3.79 M	<1 M	<1 M	1.08 #	11.4 M	<1 M
Arsenic	<0.6 mg/kg	TM181		6.57 M	6.48 M	<6 M	3.39 #	3.49 M	1.45 M
Cadmium	<0.02 mg/kg	TM181		2.17 M	0.229 M	<0.2 M	<0.02 #	<0.02 M	<0.02 M
Chromium	<0.9 mg/kg	TM181		<0.9 M	11.6 M	409 M	342 #	155 M	1290 M
Copper	<1.4 mg/kg	TM181		14.7 M	28.9 M	<14 M	23.2 #	7.03 M	6.84 M
Iron	<1000 mg/kg	TM181		93700 #	26300 #	158000 #	122000 #	137000 #	94700 #
Lead	<0.7 mg/kg	TM181		727 M	36.5 M	16.1 M	59.8 #	227 M	9.74 M
Manganese	<0.13 mg/kg	TM181		2610 M	1340 M	16700 M	14400 #	12200 M	29700 M
Mercury	<0.14 mg/kg	TM181		0.168 M	<0.14 M	<1.4 M	<0.14 #	<0.14 M	<0.14 M
Nickel	<0.2 mg/kg	TM181		13.2 M	21.7 M	27.9 M	27 #	8.68 M	5.99 M
Selenium	<1 mg/kg	TM181		<1 #	<1 #	<10 #	3.71 #	2.39 #	14.1 #
Vanadium	<0.2 mg/kg	TM181		60.1 #	19.1 #	322 #	323 #	278 #	488 #
Zinc	<1.9 mg/kg	TM181		1580 M	116 M	75.7 M	186 #	758 M	28.5 M

CERTIFICATE OF ANALYSIS

SDG:	201210-141	**Client Reference:**	P18-669	**Report Number:**	583592
Location:	Llanwern	**Order Number:**		**Superseded Report:**	582538

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	S35-2	S35-3
			Depth (m)	1.40 - 1.40	2.20 - 2.20
			Sample Type	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	08/12/2020	08/12/2020
			Sample Time	.	.
			Date Received	10/12/2020	10/12/2020
			SDG Ref	201210-141	201210-141
			Lab Sample No.(s)	23406652	23406664
			AGS Reference		
Moisture Content Ratio (% of as received sample)	%	PM024		1.4	11
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	<12 M
Phenol	<0.01 mg/kg	TM062 (S)		0.0101 M	<0.01 M
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 M
Soil Organic Matter (SOM)	<0.35 %	TM132		2.45 #	0.691 #
pH	1 pH Units	TM133		12.8 M	12.2 M
Cyanide, Total	<1 mg/kg	TM153		<1 M	<1 M
Arsenic	<0.6 mg/kg	TM181		3.59 M	<6 M
Cadmium	<0.02 mg/kg	TM181		<0.02 M	<0.2 M
Chromium	<0.9 mg/kg	TM181		603 M	114 M
Copper	<1.4 mg/kg	TM181		7.34 M	<14 M
Iron	<1000 mg/kg	TM181		113000 #	249000 #
Lead	<0.7 mg/kg	TM181		21.6 M	19.7 M
Manganese	<0.13 mg/kg	TM181		20800 M	12300 M
Mercury	<0.14 mg/kg	TM181		<0.14 M	<1.4 M
Nickel	<0.2 mg/kg	TM181		9.67 M	12.6 M
Selenium	<1 mg/kg	TM181		8.84 #	<10 #
Vanadium	<0.2 mg/kg	TM181		412 #	122 #
Zinc	<1.9 mg/kg	TM181		94.9 M	38.7 M

Validated

CERTIFICATE OF ANALYSIS

SDG:	201210-141	**Client Reference:**	P18-669	**Report Number:**	583592
Location:	Llanwern	**Order Number:**		**Superseded Report:**	582538

PAH by GCMS

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	N37-1	N37-2	O37-1	O37-2	O37-3	P36-1
			Depth (m)	0.30 - 0.30	1.50 - 1.50	0.50 - 0.50	1.40 - 1.40	2.90 - 2.90	0.10 - 0.10
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	09/12/2020	09/12/2020	09/12/2020	09/12/2020	09/12/2020	09/12/2020
			Sample Time	.	.	.	.	.	.
			Date Received	10/12/2020	10/12/2020	10/12/2020	10/12/2020	10/12/2020	10/12/2020
			SDG Ref	201210-141	201210-141	201210-141	201210-141	201210-141	201210-141
			Lab Sample No.(s)	23406646	23406658	23406624	23406630	23406638	23406590
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		85	83.2	82.7	83	79.3	86.5
Acenaphthene-d10 % recovery**	%	TM218		86	82.4	83.2	83.3	81.2	85.5
Phenanthrene-d10 % recovery**	%	TM218		84.7	80.5	80.6	80.6	83.3	83
Chrysene-d12 % recovery**	%	TM218		83.6	79.4	79.3	80.8	74.1	82.6
Perylene-d12 % recovery**	%	TM218		86	80	82.6	77.5	71.5	82.5
Naphthalene	<9 µg/kg	TM218		45 M	25.9 M	13.7 M	23 M	10.9 M	53.5 M
Acenaphthylene	<12 µg/kg	TM218		25.8 M	<12 M	<12 M	<12 M	<12 M	26.2 M
Acenaphthene	<8 µg/kg	TM218		<8 M	<8 M	<8 M	<8 M	<8 M	<8 M
Fluorene	<10 µg/kg	TM218		<10 M	<10 M	<10 M	<10 M	<10 M	<10 M
Phenanthrene	<15 µg/kg	TM218		71.1 M	42.2 M	37.9 M	50.8 M	22.9 M	128 M
Anthracene	<16 µg/kg	TM218		20.3 M	<16 M	<16 M	<16 M	<16 M	31.4 M
Fluoranthene	<17 µg/kg	TM218		137 M	68.2 M	51.7 M	72.7 M	<17 M	160 M
Pyrene	<15 µg/kg	TM218		116 M	61.8 M	45.6 M	71.2 M	<15 M	117 M
Benz(a)anthracene	<14 µg/kg	TM218		85.3 M	40.6 M	43.4 M	49.1 M	<14 M	83.2 M
Chrysene	<10 µg/kg	TM218		94.6 M	54.3 M	45.3 M	58.7 M	10.1 M	79.7 M
Benzo(b)fluoranthene	<15 µg/kg	TM218		188 M	84.9 M	86.8 M	101 M	<15 M	143 M
Benzo(k)fluoranthene	<14 µg/kg	TM218		50.4 M	21.9 M	25.5 M	31.8 M	<14 M	26.9 M
Benzo(a)pyrene	<15 µg/kg	TM218		90.9 M	34.6 M	49.2 M	51.8 M	<15 M	56.2 M
Indeno(1,2,3-cd)pyrene	<18 µg/kg	TM218		96.1 M	45.3 M	41.7 M	49.2 M	<18 M	65.4 M
Dibenzo(a,h)anthracene	<23 µg/kg	TM218		<23 M	<23 M	<23 M	<23 M	<23 M	<23 M
Benzo(g,h,i)perylene	<24 µg/kg	TM218		105 M	44.2 M	38.6 M	53.8 M	<24 M	49.5 M
PAH, Total Detected USEPA 16	<118 µg/kg	TM218		1130	524	480	614	<118	1020

Validated

CERTIFICATE OF ANALYSIS

SDG:	201210-141	**Client Reference:**	P18-669	**Report Number:**	583592
Location:	Llanwern	**Order Number:**		**Superseded Report:**	582538

PAH by GCMS

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	P36-2	P36-3	P37-1	P37-2	P37-3	Q37-1
			Depth (m)	1.10 - 1.10	2.40 - 2.40	0.40 - 0.40	1.50 - 1.50	2.70 - 2.70	0.30 - 0.30
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	09/12/2020	09/12/2020	09/12/2020	09/12/2020	09/12/2020	08/12/2020
			Sample Time	.	.	.	.	.	.
			Date Received	10/12/2020	10/12/2020	10/12/2020	10/12/2020	10/12/2020	10/12/2020
			SDG Ref	201210-141	201210-141	201210-141	201210-141	201210-141	201210-141
			Lab Sample No.(s)	23406594	23406598	23406603	23406609	23406620	23406694
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		80.2	83.4	79.3	82.7	81.3	85.4
Acenaphthene-d10 % recovery**	%	TM218		80.6	83.8	78.5	82.4	81.8	85.6
Phenanthrene-d10 % recovery**	%	TM218		84.6	80.9	79.3	79.6	83.7	84.1
Chrysene-d12 % recovery**	%	TM218		79.7	81.2	77.8	75.4	82.7	81
Perylene-d12 % recovery**	%	TM218		75.8	84	75.6	71.7	85.1	78.5
Naphthalene	<9 µg/kg	TM218		23.5 M	<9 M	130 M	18.9 M	<9 #	41.8 M
Acenaphthylene	<12 µg/kg	TM218		<12 M	<12 M	659 M	<12 M	<12 #	<12 M
Acenaphthene	<8 µg/kg	TM218		<8 M	<8 M	<40 M	<8 M	<8 #	<8 M
Fluorene	<10 µg/kg	TM218		<10 M	<10 M	110 M	<10 M	<10 #	<10 M
Phenanthrene	<15 µg/kg	TM218		44.8 M	<15 M	1180 M	34.8 M	27.4 #	72.6 M
Anthracene	<16 µg/kg	TM218		<16 M	<16 M	1170 M	<16 M	<16 #	<16 M
Fluoranthene	<17 µg/kg	TM218		41 M	<17 M	8560 M	26.4 M	31.5 #	64.7 M
Pyrene	<15 µg/kg	TM218		34.1 M	<15 M	8190 M	32.3 M	27.3 #	69.5 M
Benz(a)anthracene	<14 µg/kg	TM218		18.6 M	<14 M	5230 M	<14 M	16.6 #	33.6 M
Chrysene	<10 µg/kg	TM218		22.9 M	14.4 M	5040 M	15 M	18.4 #	40 M
Benzo(b)fluoranthene	<15 µg/kg	TM218		32.8 M	<15 M	8910 M	22.6 M	29.5 #	76 M
Benzo(k)fluoranthene	<14 µg/kg	TM218		<14 M	<14 M	2870 M	<14 M	<14 #	<14 M
Benzo(a)pyrene	<15 µg/kg	TM218		<15 M	<15 M	5640 M	<15 M	16.3 #	26.4 M
Indeno(1,2,3-cd)pyrene	<18 µg/kg	TM218		<18 M	<18 M	5250 M	<18 M	<18 #	25.5 M
Dibenzo(a,h)anthracene	<23 µg/kg	TM218		<23 M	<23 M	775 M	<23 M	<23 #	<23 M
Benzo(g,h,i)perylene	<24 µg/kg	TM218		<24 M	<24 M	4600 M	<24 M	<24 #	30.5 M
PAH, Total Detected USEPA 16	<118 µg/kg	TM218		218	<118	58300	150	167	481

Validated

CERTIFICATE OF ANALYSIS

SDG: 201210-141 **Client Reference:** P18-669 **Report Number:** 583592
Location: Llanwern **Order Number:** **Superseded Report:** 582538

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	Q37-2	Q37-3	R36-1	R36-2	R36-3	S35-1
			Depth (m)	1.20 - 1.20	3.00 - 3.00	0.10 - 0.10	0.70 - 0.70	2.00 - 2.00	0.40 - 0.40
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	08/12/2020	08/12/2020	08/12/2020	08/12/2020	08/12/2020	08/12/2020
			Sample Time	.	.	.	.	.	.
			Date Received	10/12/2020	10/12/2020	10/12/2020	10/12/2020	10/12/2020	10/12/2020
			SDG Ref	201210-141	201210-141	201210-141	201210-141	201210-141	201210-141
			Lab Sample No.(s)	23406701	23406709	23406670	23406678	23406688	23406583
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		78.1	81.3	79.4	79.3	78.9	80
Acenaphthene-d10 % recovery**	%	TM218		89.2	81	79.8	81	86.2	82.6
Phenanthrene-d10 % recovery**	%	TM218		87.7	83.7	81.2	84	90.2	87.2
Chrysene-d12 % recovery**	%	TM218		88.2	81.1	81.2	80.8	90.8	79.2
Perylene-d12 % recovery**	%	TM218		75.5	80.7	77.4	75.5	93.2	79.3
Naphthalene	<9 µg/kg	TM218		335 M	<9 #	80.1 M	36.7 #	219 M	121 M
Acenaphthylene	<12 µg/kg	TM218		<120 M	<12 #	19.1 M	<12 #	137 M	65.3 M
Acenaphthene	<8 µg/kg	TM218		240 M	<8 #	<8 M	<8 #	35.8 M	15.1 M
Fluorene	<10 µg/kg	TM218		496 M	<10 #	12 M	12 #	133 M	45 M
Phenanthrene	<15 µg/kg	TM218		815 M	30.6 #	126 M	104 #	833 M	351 M
Anthracene	<16 µg/kg	TM218		<160 M	<16 #	32.2 M	20.2 #	224 M	94.7 M
Fluoranthene	<17 µg/kg	TM218		350 M	66.2 #	184 M	138 #	1350 M	647 M
Pyrene	<15 µg/kg	TM218		684 M	46.4 #	160 M	117 #	1190 M	488 M
Benz(a)anthracene	<14 µg/kg	TM218		<140 M	29.7 #	114 M	61.8 #	825 M	432 M
Chrysene	<10 µg/kg	TM218		126 M	28.5 #	111 M	86.5 #	745 M	415 M
Benzo(b)fluoranthene	<15 µg/kg	TM218		231 M	38.1 #	172 M	102 #	1460 M	676 M
Benzo(k)fluoranthene	<14 µg/kg	TM218		<140 M	15.4 #	64.4 M	29.3 #	477 M	249 M
Benzo(a)pyrene	<15 µg/kg	TM218		<150 M	22.3 #	109 M	50.4 #	994 M	397 M
Indeno(1,2,3-cd)pyrene	<18 µg/kg	TM218		<180 M	18.7 #	112 M	66.5 #	1790 M	337 M
Dibenzo(a,h)anthracene	<23 µg/kg	TM218		<230 M	<23 #	<23 M	<23 #	169 M	85.4 M
Benzo(g,h,i)perylene	<24 µg/kg	TM218		<240 M	<24 #	94.4 M	47.8 #	1210 M	299 M
PAH, Total Detected USEPA 16	<118 µg/kg	TM218		3280	296	1390	872	11800	4720

Validated

CERTIFICATE OF ANALYSIS

SDG:	201210-141	**Client Reference:**	P18-669	**Report Number:**	583592
Location:	Llanwern	**Order Number:**		**Superseded Report:**	582538

PAH by GCMS

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	S35-2	S35-3
			Depth (m)	1.40 - 1.40	2.20 - 2.20
			Sample Type	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	08/12/2020	08/12/2020
			Sample Time	.	.
			Date Received	10/12/2020	10/12/2020
			SDG Ref	201210-141	201210-141
			Lab Sample No.(s)	23406652	23406664
			AGS Reference		
Naphthalene-d8 % recovery**	%	TM218		82.1	81.9
Acenaphthene-d10 % recovery**	%	TM218		85	85.6
Phenanthrene-d10 % recovery**	%	TM218		87	91.1
Chrysene-d12 % recovery**	%	TM218		89.1	87.2
Perylene-d12 % recovery**	%	TM218		91.3	89
Naphthalene	<9 µg/kg	TM218		51.6 M	52.3 M
Acenaphthylene	<12 µg/kg	TM218		15.5 M	<12 M
Acenaphthene	<8 µg/kg	TM218		22.5 M	<8 M
Fluorene	<10 µg/kg	TM218		32.6 M	12.5 M
Phenanthrene	<15 µg/kg	TM218		187 M	64 M
Anthracene	<16 µg/kg	TM218		32.8 M	<16 M
Fluoranthene	<17 µg/kg	TM218		227 M	77.2 M
Pyrene	<15 µg/kg	TM218		196 M	67.8 M
Benz(a)anthracene	<14 µg/kg	TM218		96.1 M	30.8 M
Chrysene	<10 µg/kg	TM218		114 M	37.9 M
Benzo(b)fluoranthene	<15 µg/kg	TM218		171 M	54.9 M
Benzo(k)fluoranthene	<14 µg/kg	TM218		51.4 M	16.8 M
Benzo(a)pyrene	<15 µg/kg	TM218		72.6 M	27 M
Indeno(1,2,3-cd)pyrene	<18 µg/kg	TM218		72.8 M	23.2 M
Dibenzo(a,h)anthracene	<23 µg/kg	TM218		<23 M	<23 M
Benzo(g,h,i)perylene	<24 µg/kg	TM218		64.6 M	<24 M
PAH, Total Detected USEPA 16	<118 µg/kg	TM218		1410	464

Validated

CERTIFICATE OF ANALYSIS

SDG:	201210-141	**Client Reference:**	P18-669	**Report Number:**	583592
Location:	Llanwern	**Order Number:**		**Superseded Report:**	582538

TPH CWG (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	N37-1	N37-2	O37-1	O37-2	O37-3	P36-1
			Depth (m)	0.30 - 0.30	1.50 - 1.50	0.50 - 0.50	1.40 - 1.40	2.90 - 2.90	0.10 - 0.10
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	09/12/2020	09/12/2020	09/12/2020	09/12/2020	09/12/2020	09/12/2020
			Sample Time	.	.	.	.	.	.
			Date Received	10/12/2020	10/12/2020	10/12/2020	10/12/2020	10/12/2020	10/12/2020
			SDG Ref	201210-141	201210-141	201210-141	201210-141	201210-141	201210-141
			Lab Sample No.(s)	23406646	23406658	23406624	23406630	23406638	23406590
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		95.4 @	91.7 @	124	84.5 @	149 4 @	79.3 @
Aliphatics >C5-C6	<10 µg/kg	TM089		<10 @	<10 @	<10	<10 @	11.2 4 @	<10 @
Aliphatics >C6-C8	<10 µg/kg	TM089		31.4 @	13.2 @	<10	<10 @	55.8 4 @	<10 @
Aliphatics >C8-C10	<10 µg/kg	TM089		43.9 @	17.6 @	<10	<10 @	132 4 @	<10 @
Aliphatics >C10-C12	<1000 µg/kg	TM414		<1000	<1000	<1000	<1000	<1000	<1000
Aliphatics >C12-C16	<1000 µg/kg	TM414		12500	<1000	<1000	<1000	6330	<1000
Aliphatics >C16-C21	<1000 µg/kg	TM414		28800	7430	<1000	2240	8500	<1000
Aliphatics >C21-C35	<1000 µg/kg	TM414		42700	27700	6570	15100	6050	6490
Aliphatics >C35-C44	<1000 µg/kg	TM414		3240	1870	<1000	1760	<1000	<1000
Total Aliphatics >C10-C44	<5000 µg/kg	TM414		87300	37700	7520	19100	21200	8580
Total Aliphatics & Aromatics >C10-C44	<10000 µg/kg	TM414		99000	46600	13000	30000	22700	17600
Aromatics >EC5-EC7	<10 µg/kg	TM089		<10 @	<10 @	<10	<10 @	<10 4 @	<10 @
Aromatics >EC7-EC8	<10 µg/kg	TM089		<10 @	<10 @	<10	<10 @	<10 4 @	<10 @
Aromatics >EC8-EC10	<10 µg/kg	TM089		29.3 @	12.1 @	<10	<10 @	88.2 4 @	<10 @
Aromatics > EC10-EC12	<1000 µg/kg	TM414		<1000	<1000	<1000	<1000	<1000	<1000
Aromatics > EC12-EC16	<1000 µg/kg	TM414		<1000	<1000	<1000	<1000	<1000	<1000
Aromatics > EC16-EC21	<1000 µg/kg	TM414		<1000	<1000	<1000	<1000	<1000	1050
Aromatics > EC21-EC35	<1000 µg/kg	TM414		8820	7160	3970	9450	<1000	6720
Aromatics >EC35-EC44	<1000 µg/kg	TM414		<1000	<1000	<1000	1060	<1000	<1000
Aromatics > EC40-EC44	<1000 µg/kg	TM414		<1000	<1000	<1000	<1000	<1000	<1000
Total Aromatics > EC10-EC44	<5000 µg/kg	TM414		11700	8910	5500	10800	<5000	8990
Total Aliphatics & Aromatics >C5-C44	<10000 µg/kg	TM414		99100	46600	13000	30000	21400	17600
Total Aliphatics >C5-C10	<50 µg/kg	TM089		75.3 @	<50 @	<50	<50 @	199 4 @	<50 @
Total Aromatics >EC5-EC10	<50 µg/kg	TM089		<50 @	<50 @	<50	<50 @	88.2 4 @	<50 @
GRO >C5-C10	<20 µg/kg	TM089		75.3 @	<20 @	<20	<20 @	287 4 @	<20 @

Validated

CERTIFICATE OF ANALYSIS

SDG: 201210-141 **Client Reference:** P18-669 **Report Number:** 583592
Location: Llanwern **Order Number:** **Superseded Report:** 582538

TPH CWG (S)

Results Legend	
#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	P36-2	P36-3	P37-1	P37-2	P37-3	Q37-1
			Depth (m)	1.10 - 1.10	2.40 - 2.40	0.40 - 0.40	1.50 - 1.50	2.70 - 2.70	0.30 - 0.30
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	09/12/2020	09/12/2020	09/12/2020	09/12/2020	09/12/2020	08/12/2020
			Sample Time	.	.	.	.	.	.
			Date Received	10/12/2020	10/12/2020	10/12/2020	10/12/2020	10/12/2020	10/12/2020
			SDG Ref	201210-141	201210-141	201210-141	201210-141	201210-141	201210-141
			Lab Sample No.(s)	23406594	23406598	23406603	23406609	23406620	23406694
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		83.7 @	103 @	79.2 @	90.5 @	103 @	85.9 @
Aliphatics >C5-C6	<10 µg/kg	TM089		<10 @	<10 @	<10 @	<10 @	<10 @	<10 @
Aliphatics >C6-C8	<10 µg/kg	TM089		<10 @	13.7 @	<10 @	<10 @	<10 @	<10 @
Aliphatics >C8-C10	<10 µg/kg	TM089		<10 @	13.7 @	<10 @	<10 @	11.2 @	<10 @
Aliphatics >C10-C12	<1000 µg/kg	TM414		<1000	<1000	<1000	<1000	<1000	<1000
Aliphatics >C12-C16	<1000 µg/kg	TM414		<1000	6690	<1000	<1000	<1000	<1000
Aliphatics >C16-C21	<1000 µg/kg	TM414		2610	10100	8130	3560	<1000	9420
Aliphatics >C21-C35	<1000 µg/kg	TM414		29000	9290	32200	171000	70100	88100
Aliphatics >C35-C44	<1000 µg/kg	TM414		3670	<1000	10800	171000	48600	28400
Total Aliphatics >C10-C44	<5000 µg/kg	TM414		35600	26300	51400	345000	120000	126000
Total Aliphatics & Aromatics >C10-C44	<10000 µg/kg	TM414		46200	31000	178000	391000	127000	159000
Aromatics >EC5-EC7	<10 µg/kg	TM089		<10 @	<10 @	<10 @	<10 @	<10 @	<10 @
Aromatics >EC7-EC8	<10 µg/kg	TM089		<10 @	<10 @	<10 @	<10 @	<10 @	<10 @
Aromatics >EC8-EC10	<10 µg/kg	TM089		<10 @	<10 @	<10 @	<10 @	<10 @	<10 @
Aromatics > EC10-EC12	<1000 µg/kg	TM414		<1000	<1000	<1000	<1000	<1000	<1000
Aromatics > EC12-EC16	<1000 µg/kg	TM414		<1000	<1000	1010	<1000	<1000	<1000
Aromatics > EC16-EC21	<1000 µg/kg	TM414		<1000	<1000	9270	<1000	<1000	<1000
Aromatics > EC21-EC35	<1000 µg/kg	TM414		9250	2170	97600	43000	6270	30800
Aromatics >EC35-EC44	<1000 µg/kg	TM414		<1000	<1000	18800	2590	<1000	1750
Aromatics > EC40-EC44	<1000 µg/kg	TM414		<1000	<1000	6790	<1000	<1000	<1000
Total Aromatics > EC10-EC44	<5000 µg/kg	TM414		10600	<5000	127000	46100	7820	33100
Total Aliphatics & Aromatics >C5-C44	<10000 µg/kg	TM414		46200	26300	178000	391000	127000	159000
Total Aliphatics >C5-C10	<50 µg/kg	TM089		<50 @	<50 @	<50 @	<50 @	<50 @	<50 @
Total Aromatics >EC5-EC10	<50 µg/kg	TM089		<50 @	<50 @	<50 @	<50 @	<50 @	<50 @
GRO >C5-C10	<20 µg/kg	TM089		<20 @	<20 @	<20 @	<20 @	<20 @	<20 @

Validated

CERTIFICATE OF ANALYSIS

SDG: 201210-141 **Client Reference:** P18-669 **Report Number:** 583592
Location: Llanwern **Order Number:** **Superseded Report:** 582538

TPH CWG (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	Q37-2	Q37-3	R36-1	R36-2	R36-3	S35-1
			Depth (m)	1.20 - 1.20	3.00 - 3.00	0.10 - 0.10	0.70 - 0.70	2.00 - 2.00	0.40 - 0.40
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	08/12/2020	08/12/2020	08/12/2020	08/12/2020	08/12/2020	08/12/2020
			Sample Time	.	.	.	.	.	.
			Date Received	10/12/2020	10/12/2020	10/12/2020	10/12/2020	10/12/2020	10/12/2020
			SDG Ref	201210-141	201210-141	201210-141	201210-141	201210-141	201210-141
			Lab Sample No.(s)	23406701	23406709	23406670	23406678	23406688	23406583
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		69.7 4 @	91.6 @	73 @	86.4 @	78.6 @	85.8 @
Aliphatics >C5-C6	<10 µg/kg	TM089		<10 4 @	<10 @	<10 @	12 @	10.3 @	<10 @
Aliphatics >C6-C8	<10 µg/kg	TM089		41.6 4 @	12 @	<10 @	35 @	28.7 @	13.2 @
Aliphatics >C8-C10	<10 µg/kg	TM089		882 4 @	15 @	<10 @	50 @	24.6 @	18.3 @
Aliphatics >C10-C12	<1000 µg/kg	TM414		137000	<1000	<1000	<1000	2470	<1000
Aliphatics >C12-C16	<1000 µg/kg	TM414		701000	<1000	<1000	3160	54600	3250
Aliphatics >C16-C21	<1000 µg/kg	TM414		1350000	1200	1730	11000	203000	10400
Aliphatics >C21-C35	<1000 µg/kg	TM414		10000000	16900	23100	58600	695000	30200
Aliphatics >C35-C44	<1000 µg/kg	TM414		2370000	2930	1650	16900	258000	3840
Total Aliphatics >C10-C44	<5000 µg/kg	TM414		14600000	21200	26700	89700	1210000	47700
Total Aliphatics & Aromatics >C10-C44	<10000 µg/kg	TM414		15600000	27600	33700	99900	1360000	61000
Aromatics >EC5-EC7	<10 µg/kg	TM089		<10 4 @	<10 @	<10 @	<10 @	<10 @	<10 @
Aromatics >EC7-EC8	<10 µg/kg	TM089		<10 4 @	<10 @	<10 @	<10 @	<10 @	<10 @
Aromatics >EC8-EC10	<10 µg/kg	TM089		589 4 @	10 @	<10 @	33 @	16.4 @	12.2 @
Aromatics > EC10-EC12	<1000 µg/kg	TM414		22300	<1000	<1000	<1000	<1000	<1000
Aromatics > EC12-EC16	<1000 µg/kg	TM414		147000	<1000	<1000	<1000	9090	<1000
Aromatics > EC16-EC21	<1000 µg/kg	TM414		88800	<1000	<1000	<1000	9700	1440
Aromatics > EC21-EC35	<1000 µg/kg	TM414		739000	4600	5320	8360	126000	9900
Aromatics >EC35-EC44	<1000 µg/kg	TM414		14900	<1000	<1000	<1000	4220	<1000
Aromatics > EC40-EC44	<1000 µg/kg	TM414		<10000	<1000	<1000	<1000	<1000	<1000
Total Aromatics > EC10-EC44	<5000 µg/kg	TM414		1010000	6350	7030	10200	149000	13300
Total Aliphatics & Aromatics >C5-C44	<10000 µg/kg	TM414		15600000	27600	33700	100000	1360000	61000
Total Aliphatics >C5-C10	<50 µg/kg	TM089		924 4 @	<50 @	<50 @	97 @	63.6 @	<50 @
Total Aromatics >EC5-EC10	<50 µg/kg	TM089		589 4 @	<50 @	<50 @	<50 @	<50 @	<50 @
GRO >C5-C10	<20 µg/kg	TM089		1510 4 @	<20 @	<20 @	97 @	63.6 @	<20 @

Validated

CERTIFICATE OF ANALYSIS

SDG:	201210-141	**Client Reference:**	P18-669	**Report Number:**	583592
Location:	Llanwern	**Order Number:**		**Superseded Report:**	582538

TPH CWG (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	S35-2	S35-3				
			Depth (m)	1.40 - 1.40	2.20 - 2.20				
			Sample Type	Soil/Solid (S)	Soil/Solid (S)				
			Date Sampled	08/12/2020	08/12/2020				
			Sample Time	.	.				
			Date Received	10/12/2020	10/12/2020				
			SDG Ref	201210-141	201210-141				
			Lab Sample No.(s)	23406652	23406664				
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		84.4	78.1 @				
Aliphatics >C5-C6	<10 µg/kg	TM089		19.3	32.8 @				
Aliphatics >C6-C8	<10 µg/kg	TM089		28.4	45.2 @				
Aliphatics >C8-C10	<10 µg/kg	TM089		28.4	44.1 @				
Aliphatics >C10-C12	<1000 µg/kg	TM414		<1000	14500				
Aliphatics >C12-C16	<1000 µg/kg	TM414		18100	58400				
Aliphatics >C16-C21	<1000 µg/kg	TM414		109000	119000				
Aliphatics >C21-C35	<1000 µg/kg	TM414		803000	1010000				
Aliphatics >C35-C44	<1000 µg/kg	TM414		184000	493000				
Total Aliphatics >C10-C44	<5000 µg/kg	TM414		1110000	1700000				
Total Aliphatics & Aromatics >C10-C44	<10000 µg/kg	TM414		1160000	1970000				
Aromatics >EC5-EC7	<10 µg/kg	TM089		<10	<10 @				
Aromatics >EC7-EC8	<10 µg/kg	TM089		<10	<10 @				
Aromatics >EC8-EC10	<10 µg/kg	TM089		19.3	29.4 @				
Aromatics > EC10-EC12	<1000 µg/kg	TM414		<1000	4070				
Aromatics > EC12-EC16	<1000 µg/kg	TM414		1290	18300				
Aromatics > EC16-EC21	<1000 µg/kg	TM414		2130	19900				
Aromatics > EC21-EC35	<1000 µg/kg	TM414		42000	214000				
Aromatics >EC35-EC44	<1000 µg/kg	TM414		2760	15200				
Aromatics > EC40-EC44	<1000 µg/kg	TM414		<1000	<1000				
Total Aromatics > EC10-EC44	<5000 µg/kg	TM414		48200	271000				
Total Aliphatics & Aromatics >C5-C44	<10000 µg/kg	TM414		1160000	1970000				
Total Aliphatics >C5-C10	<50 µg/kg	TM089		76.1	122 @				
Total Aromatics >EC5-EC10	<50 µg/kg	TM089		<50	<50 @				
GRO >C5-C10	<20 µg/kg	TM089		76.1	122 @				

Validated

CERTIFICATE OF ANALYSIS

SDG:	201210-141	**Client Reference:**	P18-669	**Report Number:**	583592
Location:	Llanwern	**Order Number:**		**Superseded Report:**	582538

VOC MS (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	N37-1	N37-2	O37-1	O37-2	O37-3	P36-1
			Depth (m)	0.30 - 0.30	1.50 - 1.50	0.50 - 0.50	1.40 - 1.40	2.90 - 2.90	0.10 - 0.10
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	09/12/2020	09/12/2020	09/12/2020	09/12/2020	09/12/2020	09/12/2020
			Sample Time	.	.	.	.	.	.
			Date Received	10/12/2020	10/12/2020	10/12/2020	10/12/2020	10/12/2020	10/12/2020
			SDG Ref	201210-141	201210-141	201210-141	201210-141	201210-141	201210-141
			Lab Sample No.(s)	23406646	23406658	23406624	23406630	23406638	23406590
			AGS Reference						
Dibromofluoromethane**	%	TM116		106 @	105 @	107 @	106 @	109 @	118 @
Toluene-d8**	%	TM116		98.1 @	99.4 @	96.8 @	97.7 @	98.4 @	97.3 @
4-Bromofluorobenzene**	%	TM116		97.8 @	99.2 @	88.4 @	99.8 @	97.8 @	94.6 @
Methyl Tertiary Butyl Ether	<10 µg/kg	TM116		<200 @ M	<200 @ M	<200 @ M	<200 @ M	<200 @ M	<200 @ M
Benzene	<9 µg/kg	TM116		<180 @ M	<180 @ M	<180 @ M	<180 @ M	<180 @ M	<180 @ M
Toluene	<7 µg/kg	TM116		<140 @ M	<140 @ M	<140 @ M	<140 @ M	<140 @ M	<140 @ M
Ethylbenzene	<4 µg/kg	TM116		<80 @ M	<80 @ M	<80 @ M	<80 @ M	<80 @ M	<80 @ M
p/m-Xylene	<10 µg/kg	TM116		<200 @ #	<200 @ #	<200 @ #	<200 @ #	<200 @ #	<200 @ #
o-Xylene	<10 µg/kg	TM116		<200 @ M	<200 @ M	<200 @ M	<200 @ M	<200 @ M	<200 @ M
Naphthalene	<13 µg/kg	TM116		<13 M	<13 M	<260 M	<13 M	<13 M	<13 M
Sum of Detected Xylenes	<0.02 mg/kg	TM116		<0.4 @	<0.4 @	<0.4 @	<0.4 @	<0.4 @	<0.4 @
Sum of BTEX	<40 µg/kg	TM116		<800 @	<800 @	<800 @	<800 @	<800 @	<800 @

Validated

CERTIFICATE OF ANALYSIS

SDG:	201210-141	**Client Reference:**	P18-669	**Report Number:**	583592
Location:	Llanwern	**Order Number:**		**Superseded Report:**	582538

VOC MS (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	P36-2	P36-3	P37-1	P37-2	P37-3	Q37-1
			Depth (m)	1.10 - 1.10	2.40 - 2.40	0.40 - 0.40	1.50 - 1.50	2.70 - 2.70	0.30 - 0.30
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	09/12/2020	09/12/2020	09/12/2020	09/12/2020	09/12/2020	08/12/2020
			Sample Time	.	.	.	.	.	.
			Date Received	10/12/2020	10/12/2020	10/12/2020	10/12/2020	10/12/2020	10/12/2020
			SDG Ref	201210-141	201210-141	201210-141	201210-141	201210-141	201210-141
			Lab Sample No.(s)	23406594	23406598	23406603	23406609	23406620	23406694
			AGS Reference						
Dibromofluoromethane**	%	TM116		104 @	104 @	108 @	105 @	110 @	107 @
Toluene-d8**	%	TM116		97.5 @	99.3 @	95.8 @	97.6 @	98.7 @	97.8 @
4-Bromofluorobenzene**	%	TM116		94.1 @	96 @	94.1 @	96.8 @	98.4 @	97.6 @
Methyl Tertiary Butyl Ether	<10 µg/kg	TM116		<200 @ M	<200 @ M	<200 @ M	<200 @ M	<200 @ #	<200 @ M
Benzene	<9 µg/kg	TM116		<180 @ M	<180 @ M	<180 @ M	<180 @ M	<180 @ #	<180 @ M
Toluene	<7 µg/kg	TM116		<140 @ M	<140 @ M	<140 @ M	<140 @ M	<140 @ #	<140 @ M
Ethylbenzene	<4 µg/kg	TM116		<80 @ M	<80 @ M	<80 @ M	<80 @ M	<80 @ #	<80 @ M
p/m-Xylene	<10 µg/kg	TM116		<200 @ #	<200 @ #	<200 @ #	<200 @ #	<200 @ #	<200 @ #
o-Xylene	<10 µg/kg	TM116		<200 @ M	<200 @ M	<200 @ M	<200 @ M	<200 @ #	<200 @ M
Naphthalene	<13 µg/kg	TM116		<13 M	<13 M	<13 M	<13 M	<13 #	<13 M
Sum of Detected Xylenes	<0.02 mg/kg	TM116		<0.4 @	<0.4 @	<0.4 @	<0.4 @	<0.4 @	<0.4 @
Sum of BTEX	<40 µg/kg	TM116		<800 @	<800 @	<800 @	<800 @	<800 @	<800 @

Validated

CERTIFICATE OF ANALYSIS

SDG:	201210-141	**Client Reference:**	P18-669	**Report Number:**	583592
Location:	Llanwern	**Order Number:**		**Superseded Report:**	582538

VOC MS (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	Q37-2	Q37-3	R36-1	R36-2	R36-3	S35-1
			Depth (m)	1.20 - 1.20	3.00 - 3.00	0.10 - 0.10	0.70 - 0.70	2.00 - 2.00	0.40 - 0.40
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	08/12/2020	08/12/2020	08/12/2020	08/12/2020	08/12/2020	08/12/2020
			Sample Time	.	.	.	.	.	.
			Date Received	10/12/2020	10/12/2020	10/12/2020	10/12/2020	10/12/2020	10/12/2020
			SDG Ref	201210-141	201210-141	201210-141	201210-141	201210-141	201210-141
			Lab Sample No.(s)	23406701	23406709	23406670	23406678	23406688	23406583
			AGS Reference						
Dibromofluoromethane**	%	TM116		107 @	117 @	106 @	106 @	104 @	106 @
Toluene-d8**	%	TM116		95.5 @	98.4 @	97.1 @	97.2 @	97.2 @	98.8 @
4-Bromofluorobenzene**	%	TM116		92.4 @	102 @	91.8 @	92 @	90.2 @	96.2 @
Methyl Tertiary Butyl Ether	<10 µg/kg	TM116		<200 @ M	<200 @ #	<200 @ #	<200 @ #	<200 @ M	<200 @ M
Benzene	<9 µg/kg	TM116		<180 @ M	<180 @ #	<180 @ #	<180 @ #	<180 @ M	<180 @ M
Toluene	<7 µg/kg	TM116		<140 @ M	<140 @ #	<140 @ #	<140 @ #	<140 @ M	<140 @ M
Ethylbenzene	<4 µg/kg	TM116		<80 @ M	<80 @ #	<80 @ #	<80 @ #	<80 @ M	<80 @ M
p/m-Xylene	<10 µg/kg	TM116		<200 @ #	<200 @ #	<200 @ #	<200 @ #	<200 @ #	<200 @ #
o-Xylene	<10 µg/kg	TM116		<200 @ M	<200 @ #	<200 @ #	<200 @ #	<200 @ M	<200 @ M
Naphthalene	<13 µg/kg	TM116		<260 M	<13 M	<260 #	<13 #	<260 M	<13 M
Sum of Detected Xylenes	<0.02 mg/kg	TM116		<0.4 @	<0.4 @	<0.4 @	<0.4 @	<0.4 @	<0.4 @
Sum of BTEX	<40 µg/kg	TM116		<800 @	<800 @	<800 @	<800 @	<800 @	<800 @

CERTIFICATE OF ANALYSIS

SDG:	201210-141	**Client Reference:**	P18-669	**Report Number:**	583592
Location:	Llanwern	**Order Number:**		**Superseded Report:**	582538

VOC MS (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	S35-2	S35-3				
			Depth (m)	1.40 - 1.40	2.20 - 2.20				
			Sample Type	Soil/Solid (S)	Soil/Solid (S)				
			Date Sampled	08/12/2020	08/12/2020				
			Sample Time	.	.				
			Date Received	10/12/2020	10/12/2020				
			SDG Ref	201210-141	201210-141				
			Lab Sample No.(s)	23406652	23406664				
			AGS Reference						
Dibromofluoromethane**	%	TM116		110 @	110 @				
Toluene-d8**	%	TM116		95.7 @	97.8 @				
4-Bromofluorobenzene**	%	TM116		93.3 @	92.4 @				
Methyl Tertiary Butyl Ether	<10 µg/kg	TM116		<10 @ M	<200 @ M				
Benzene	<9 µg/kg	TM116		<9 @ M	<180 @ M				
Toluene	<7 µg/kg	TM116		<7 @ M	<140 @ M				
Ethylbenzene	<4 µg/kg	TM116		<4 @ M	<80 @ M				
p/m-Xylene	<10 µg/kg	TM116		<10 @ #	<200 @ #				
o-Xylene	<10 µg/kg	TM116		<10 @ M	<200 @ M				
Naphthalene	<13 µg/kg	TM116		<260 M	25.9 M				
Sum of Detected Xylenes	<0.02 mg/kg	TM116		<0.02 @	<0.4 @				
Sum of BTEX	<40 µg/kg	TM116		<40 @	<800 @				

CERTIFICATE OF ANALYSIS

SDG:	201210-141	**Client Reference:**	P18-669	**Report Number:**	583592
Location:	Llanwern	**Order Number:**		**Superseded Report:**	582538

Asbestos Identification - Solid Samples

Results Legend

#	ISO17025 accredited.
M	*m*CERTS accredited.
*	Subcontracted test.
(F)	Trigger breach confirmed
1-5&+$@	Sample deviation (see appendix)

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthophyllite	Fibrous Tremolite	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	N37-1 0.30 - 0.30 SOLID 09/12/2020 00:00:00 10/12/2020 05:00:00 201210-141 23406646 TM048	16/12/2020	Barbara Urbanek-Walsh	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	O37-3 2.90 - 2.90 SOLID 09/12/2020 00:00:00 10/12/2020 05:00:00 201210-141 23406638 TM048	16/12/2020	Barbara Urbanek-Walsh	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	P36-2 1.10 - 1.10 SOLID 09/12/2020 00:00:00 10/12/2020 05:00:00 201210-141 23406594 TM048	16/12/2020	James Richards	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	P37-1 0.40 - 0.40 SOLID 09/12/2020 00:00:00 10/12/2020 05:00:00 201210-141 23406603 TM048	16/12/2020	Barbara Urbanek-Walsh	Loose fibres in soil.	Not Detected (#)	Trace (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	P37-3 2.70 - 2.70 SOLID 09/12/2020 00:00:00 10/12/2020 05:00:00 201210-141 23406620 TM048	16/12/2020	Barbara Urbanek-Walsh	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	Q37-1 0.30 - 0.30 SOLID 08/12/2020 00:00:00 10/12/2020 05:00:00 201210-141 23406694 TM048	15/12/2020	Barbara Urbanek-Walsh	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	Q37-3 3.00 - 3.00 SOLID 08/12/2020 00:00:00 10/12/2020 05:00:00 201210-141 23406709 TM048	16/12/2020	James Richards	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	R36-1 0.10 - 0.10 SOLID 08/12/2020 00:00:00 10/12/2020 05:00:00 201210-141 23406670 TM048	16/12/2020	Barbara Urbanek-Walsh	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected

Validated

CERTIFICATE OF ANALYSIS

SDG:	201210-141	**Client Reference:**	P18-669	**Report Number:**	583592
Location:	Llanwern	**Order Number:**		**Superseded Report:**	582538

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthophyllite	Fibrous Tremolite	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	R36-3 2.00 - 2.00 SOLID 08/12/2020 00:00:00 10/12/2020 05:00:00 201210-141 23406688 TM048	15/12/2020	Barbara Urbanek-Walsh	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	S35-1 0.40 - 0.40 SOLID 08/12/2020 00:00:00 10/12/2020 05:00:00 201210-141 23406583 TM048	16/12/2020	Barbara Urbanek-Walsh	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected

CERTIFICATE OF ANALYSIS

SDG:	201210-141	**Client Reference:**	P18-669	**Report Number:**	583592
Location:	Llanwern	**Order Number:**		**Superseded Report:**	582538

Asbestos Quantification - Full

Results Legend

#	ISO17025 accredited.
M	*m*CERTS accredited.
*	Subcontracted test.
(F)	Trigger breach confirmed
1-5&♦§@	Sample deviation (see appendix)

		Additional Asbestos Components	Analysts Comments	Asbestos Quantification - Gravimetric - %	Asbestos Quantification - PCOM	Asbestos Quantification - Total - %
Cust. Sample Ref.	P37-1	None (#)	N/C	<0.001 (#)	<0.001 (#)	<0.001 (#)
Depth (m)	0.40 - 0.40					
Sample Type	SOLID					
Date Sampled	09/12/2020 00:00:00					
Date Received	10/12/2020 05:00:00					
SDG	201210-141					
Original Sample	23406603					
Method Number	TM304					

Table of Results - Appendix

Method No	Reference	Description
PM024	Modified BS 1377	Soil preparation including homogenisation, moisture screens of soils for Asbestos Containing Material
TM024	Method 4500A & B, AWWA/APHA, 20th Ed., 1999	Determination of Exchangeable Ammonium and Ammoniacal Nitrogen as N by titration on solids
TM048	HSG 248, Asbestos: The analysts' guide for sampling, analysis and clearance procedures	Identification of Asbestos in Bulk Material
TM062 (S)	National Grid Property Holdings Methods for the Collection & Analysis of Samples from National Grid Sites version 1 Sec 3.9	Determination of Phenols in Soils by HPLC
TM089	Modified: US EPA Methods 8020 & 602	Determination of Gasoline Range Hydrocarbons (GRO) by Headspace GC-FID (C4-C12)
TM116	Modified: US EPA Method 8260, 8120, 8020, 624, 610 & 602	Determination of Volatile Organic Compounds by Headspace / GC-MS
TM132	In - house Method	ELTRA CS800 Operators Guide
TM133	BS 1377: Part 3 1990;BS 6068-2.5	Determination of pH in Soil and Water using the GLpH pH Meter
TM153	Method 4500A,B,C, I, M AWWA/APHA, 20th Ed., 1999	Determination of Total Cyanide, Free (Easily Liberatable) Cyanide and Thiocyanate using the Skalar SANS+ System Segmented Flow Analyser
TM181	US EPA Method 6010B	Determination of Routine Metals in Soil by iCap 6500 Duo ICP-OES
TM218	Shaker extraction - EPA method 3546.	The determination of PAH in soil samples by GC-MS
TM304	HSE Contract research Report no 83/1996	Asbestos Quantification in Soil: Fibres identified by morphology only
TM414	Analysis of Petroleum Hydrocarbons in Environmental Media – Total Petroleum Hydrocarbon Criteria	Determination of Speciated Extractable Petroleum Hydrocarbons in Soils by GCxGC-FID

NA = not applicable.

Chemical testing (unless subcontracted) performed at ALS Life Sciences Ltd Hawarden (Method codes TM) or ALS Life Sciences Ltd Aberdeen (Method codes S).

CERTIFICATE OF ANALYSIS

SDG:	201210-141	**Client Reference:**	P18-669	**Report Number:**	583592
Location:	Llanwern	**Order Number:**		**Superseded Report:**	582538

Test Completion Dates

Lab Sample No(s)	23406646	23406658	23406624	23406630	23406638	23406590	23406594	23406598	23406603	23406609
Customer Sample Ref.	N37-1	N37-2	O37-1	O37-2	O37-3	P36-1	P36-2	P36-3	P37-1	P37-2
AGS Ref.										
Depth	0.30 - 0.30	1.50 - 1.50	0.50 - 0.50	1.40 - 1.40	2.90 - 2.90	0.10 - 0.10	1.10 - 1.10	2.40 - 2.40	0.40 - 0.40	1.50 - 1.50
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
Ammonium Soil by Titration	17-Dec-2020	17-Dec-2020	17-Dec-2020	17-Dec-2020	17-Dec-2020	17-Dec-2020	17-Dec-2020	17-Dec-2020	17-Dec-2020	17-Dec-2020
Asbestos ID in Solid Samples	16-Dec-2020				16-Dec-2020		16-Dec-2020		16-Dec-2020	
Asbestos Quantification - Full									29-Dec-2020	
Cyanide Comp/Free/Total/Thiocyanate	15-Dec-2020	15-Dec-2020	15-Dec-2020	15-Dec-2020	15-Dec-2020	15-Dec-2020	15-Dec-2020	15-Dec-2020	15-Dec-2020	15-Dec-2020
EPH CWG GC (S)	08-Jan-2021	08-Jan-2021	11-Jan-2021	13-Jan-2021	08-Jan-2021	13-Jan-2021	11-Jan-2021	13-Jan-2021	11-Jan-2021	14-Jan-2021
GRO by GC-FID (S)	18-Jan-2021	15-Jan-2021	19-Jan-2021	18-Jan-2021	19-Jan-2021	15-Jan-2021	15-Jan-2021	15-Jan-2021	18-Jan-2021	18-Jan-2021
Metals in solid samples by OES	17-Dec-2020	17-Dec-2020	17-Dec-2020	17-Dec-2020	17-Dec-2020	16-Dec-2020	17-Dec-2020	17-Dec-2020	17-Dec-2020	17-Dec-2020
PAH by GCMS	15-Dec-2020	15-Dec-2020	15-Dec-2020	15-Dec-2020	16-Dec-2020	16-Dec-2020	16-Dec-2020	15-Dec-2020	16-Dec-2020	15-Dec-2020
pH	14-Dec-2020	15-Dec-2020	14-Dec-2020	15-Dec-2020	16-Dec-2020	15-Dec-2020	14-Dec-2020	15-Dec-2020	14-Dec-2020	15-Dec-2020
Phenols by HPLC (S)	15-Dec-2020	15-Dec-2020	15-Dec-2020	15-Dec-2020	17-Dec-2020	15-Dec-2020	15-Dec-2020	15-Dec-2020	16-Dec-2020	15-Dec-2020
Sample description	11-Dec-2020	11-Dec-2020	11-Dec-2020	11-Dec-2020	12-Dec-2020	11-Dec-2020	11-Dec-2020	11-Dec-2020	12-Dec-2020	11-Dec-2020
Total Organic Carbon	17-Dec-2020	17-Dec-2020	17-Dec-2020	17-Dec-2020	17-Dec-2020	17-Dec-2020	17-Dec-2020	17-Dec-2020	17-Dec-2020	17-Dec-2020
TPH CWG GC (S)	18-Jan-2021	15-Jan-2021	19-Jan-2021	18-Jan-2021	19-Jan-2021	15-Jan-2021	15-Jan-2021	15-Jan-2021	18-Jan-2021	18-Jan-2021
VOC MS (S)	15-Jan-2021	14-Jan-2021	15-Jan-2021	15-Jan-2021	15-Jan-2021	14-Jan-2021	14-Jan-2021	14-Jan-2021	15-Jan-2021	15-Jan-2021

Lab Sample No(s)	23406620	23406694	23406701	23406709	23406670	23406678	23406688	23406583	23406652	23406664
Customer Sample Ref.	P37-3	Q37-1	Q37-2	Q37-3	R36-1	R36-2	R36-3	S35-1	S35-2	S35-3
AGS Ref.										
Depth	2.70 - 2.70	0.30 - 0.30	1.20 - 1.20	3.00 - 3.00	0.10 - 0.10	0.70 - 0.70	2.00 - 2.00	0.40 - 0.40	1.40 - 1.40	2.20 - 2.20
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
Ammonium Soil by Titration	17-Dec-2020	17-Dec-2020	17-Dec-2020	17-Dec-2020	17-Dec-2020	17-Dec-2020	17-Dec-2020	16-Dec-2020	17-Dec-2020	17-Dec-2020
Asbestos ID in Solid Samples	16-Dec-2020	15-Dec-2020		16-Dec-2020	16-Dec-2020		15-Dec-2020	16-Dec-2020		
Cyanide Comp/Free/Total/Thiocyanate	15-Dec-2020	15-Dec-2020	15-Dec-2020	15-Dec-2020	15-Dec-2020	15-Dec-2020	15-Dec-2020	15-Dec-2020	15-Dec-2020	15-Dec-2020
EPH CWG GC (S)	08-Jan-2021	08-Jan-2021	08-Jan-2021	08-Jan-2021	11-Jan-2021	08-Jan-2021	15-Jan-2021	11-Jan-2021	08-Jan-2021	08-Jan-2021
GRO by GC-FID (S)	19-Jan-2021	15-Jan-2021	19-Jan-2021	15-Jan-2021	15-Jan-2021	15-Jan-2021	15-Jan-2021	15-Jan-2021	19-Jan-2021	18-Jan-2021
Metals in solid samples by OES	17-Dec-2020	17-Dec-2020	17-Dec-2020	17-Dec-2020	17-Dec-2020	17-Dec-2020	17-Dec-2020	17-Dec-2020	17-Dec-2020	17-Dec-2020
PAH by GCMS	16-Dec-2020	15-Dec-2020	17-Dec-2020	16-Dec-2020	16-Dec-2020	16-Dec-2020	16-Dec-2020	16-Dec-2020	15-Dec-2020	16-Dec-2020
pH	14-Dec-2020	14-Dec-2020	15-Dec-2020	16-Dec-2020	14-Dec-2020	15-Dec-2020	16-Dec-2020	14-Dec-2020	14-Dec-2020	14-Dec-2020
Phenols by HPLC (S)	15-Dec-2020	15-Dec-2020	15-Dec-2020	15-Dec-2020	15-Dec-2020	15-Dec-2020	17-Dec-2020	17-Dec-2020	17-Dec-2020	15-Dec-2020
Sample description	12-Dec-2020	11-Dec-2020	11-Dec-2020	11-Dec-2020	11-Dec-2020	11-Dec-2020	12-Dec-2020	12-Dec-2020	12-Dec-2020	11-Dec-2020
Total Organic Carbon	17-Dec-2020	17-Dec-2020	17-Dec-2020	17-Dec-2020	17-Dec-2020	17-Dec-2020	17-Dec-2020	17-Dec-2020	17-Dec-2020	17-Dec-2020
TPH CWG GC (S)	19-Jan-2021	15-Jan-2021	19-Jan-2021	15-Jan-2021	15-Jan-2021	15-Jan-2021	15-Jan-2021	15-Jan-2021	19-Jan-2021	18-Jan-2021
VOC MS (S)	15-Jan-2021	14-Jan-2021	14-Jan-2021	14-Jan-2021	14-Jan-2021	14-Jan-2021	14-Jan-2021	14-Jan-2021	18-Jan-2021	15-Jan-2021

Appendix General

1. Results are expressed on a dry weight basis (dried at 35ºC) for all soil analyses except for the following: NRA and CEN Leach tests, flash point LOI, pH, ammonium as NH4 by the BRE method, VOC TICs and SVOC TICs.

2. If sufficient sample is received a sub sample will be retained free of charge for 30 days after analysis is completed (e-mailed) for all sample types unless the sample is destroyed on testing. The prepared soil sub sample that is analysed for asbestos will be retained for a period of 6 months after the analysis date. All bulk samples will be retained for a period of 6 months after the analysis date. All samples received and not scheduled will be disposed of one month after the date of receipt unless we are instructed to the contrary. Once the initial period has expired, a storage charge will be applied for each month or part thereof until the client cancels the request for sample storage. ALS reserve the right to charge for samples received and stored but not analysed.

3. With respect to turnaround, we will always endeavour to meet client requirements wherever possible, but turnaround times cannot be absolutely guaranteed due to so many variables beyond our control.

4. We take responsibility for any test performed by sub-contractors (marked with an asterisk). We endeavour to use UKAS/MCERTS Accredited Laboratories, who either complete a quality questionnaire or are audited by ourselves. For some determinands there are no UKAS/MCERTS Accredited Laboratories, in this instance a laboratory with a known track record will be utilised.

5. If no separate volatile sample is supplied by the client, or if a headspace or sediment is present in the volatile sample, the integrity of the data may be compromised. This will be flagged up as an invalid VOC on the test schedule and the result marked as deviating on the test certificate.

6. NDP - No determination possible due to insufficient/unsuitable sample.

7. Results relate only to the items tested.

8. LoDs (Limit of Detection) for wet tests reported on a dry weight basis are not corrected for moisture content.

9. **Surrogate recoveries** - Surrogates are added to your sample to monitor recovery of the test requested. A % recovery is reported, results are not corrected for the recovery measured. Typical recoveries for organics tests are 70-130%. Recoveries in soils are affected by organic rich or clay rich matrices. Waters can be affected by remediation fluids or high amounts of sediment. Test results are only ever reported if all of the associated quality checks pass; it is assumed that all recoveries outside of the values above are due to matrix affect.

10. Stones/debris are not routinely removed. We always endeavour to take a representative sub sample from the received sample.

11. In certain circumstances the method detection limit may be elevated due to the sample being outside the calibration range. Other factors that may contribute to this include possible interferences. In both cases the sample would be diluted which would cause the method detection limit to be raised.

12. Mercury results quoted on soils will not include volatile mercury as the analysis is performed on a dried and crushed sample.

13. For leachate preparations other than Zero Headspace Extraction (ZHE) volatile loss may occur.

14. For the BSEN 12457-3 two batch process to allow the cumulative release to be calculated, the volume of the leachate produced is measured and filtered for all tests. We therefore cannot carry out any unfiltered analysis. The tests affected include volatiles GCFID/GCMS and all subcontracted analysis.

15. Analysis and identification of specific compounds using GCFID is by retention time only, and we routinely calibrate and quantify for benzene, toluene, ethylbenzenes and xylenes (BTEX). For total volatiles in the C5-C12 range, the total area of the chromatogram is integrated and expressed as ug/kg or ug/l. Although this analysis is commonly used for the quantification of gasoline range organics (GRO), the system will also detect other compounds such as chlorinated solvents, and this may lead to a falsely high result with respect to hydrocarbons only. It is not possible to specifically identify these non-hydrocarbons, as standards are not routinely run for any other compounds, and for more definitive identification, volatiles by GCMS should be utilised.

16. We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample. Other coarse granular material such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

17. **Tentatively Identified Compounds (TICs)** are non-target peaks in VOC and SVOC analysis. All non-target peaks detected with a concentration above the LoD are subjected to a mass spectral library search. Non-target peaks with a library search confidence of >75% are reported based on the best mass spectral library match. When a non-target peak with a library search confidence of <75% is detected it is reported as "mixed hydrocarbons". Non-target compounds identified from the scan data are semi-quantified relative to one of the deuterated internal standards, under the same chromatographic conditions as the target compounds. This result is reported as a semi-quantitative value and reported as Tentatively Identified Compounds (TICs). TICs are outside the scope of UKAS accreditation and are not moisture corrected.

18. **Sample Deviations**

If a sample is classed as deviated then the associated results may be compromised.

1	**Container with Headspace provided for volatiles analysis**
2	**Incorrect container received**
3	**Deviation from method**
4	**Matrix interference**
♦	**Sample holding time exceeded in laboratory**
@	**Sample holding time exceeded due to late arrival of instructions or samples**
§	**Sampled on date not provided**

19. **Asbestos**

When requested, the individual sub sample scheduled will be analysed in house for the presence of asbestos fibres and asbestos containing material by our documented in house method TM048 based on HSG 248 (2005), which is accredited to ISO17025. If a specific asbestos fibre type is not found this will be reported as "Not detected". If no asbestos fibre types are found all will be reported as "Not detected" and the sub sample analysed deemed to be clear of asbestos. If an asbestos fibre type is found it will be reported as detected (for each fibre type found). Testing can be carried out on asbestos positive samples, but, due to Health and Safety considerations, may be replaced by alternative tests or reported as No Determination Possible (NDP). The quantity of asbestos present is not determined unless specifically requested.

Identification of Asbestos in Bulk Materials & Soils

The results for identification of asbestos in bulk materials are obtained from supplied bulk materials which have been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

The results for identification of asbestos in soils are obtained from a homogenised sub sample which has been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

Asbestos Type	Common Name
Chrysotile	White Asbestos
Amosite	Brown Asbestos
Crocidolite	Blue Asbestos
Fibrous Actinolite	-
Fibrous Anthophyllite	-
Fibrous Tremolite	-

Visual Estimation Of Fibre Content

Estimation of fibre content is not permitted as part of our UKAS accredited test other than: - Trace - Where only one or two asbestos fibres were identified.

Respirable Fibres

Respirable fibres are defined as fibres of <3 µm diameter, longer than 5 µm and with aspect ratios of at least 3:1 that can be inhaled into the lower regions of the lung and are generally acknowledged to be most important predictor of hazard and risk for cancers of the lung.
Standing Committee of Analysts, *The Quantification of Asbestos in Soil (2017).*

Further guidance on typical asbestos fibre content of manufactured products can be found in HSG 264.

The identification of asbestos containing materials and soils falls within our schedule of tests for which we hold UKAS accreditation, however opinions, interpretations and all other information contained in the report are outside the scope of UKAS accreditation.

Unit 7-8 Hawarden Business Park
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Deeside
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email: hawardencustomerservices@alsglobal.com
Website: www.alsenvironmental.co.uk

Rodgers Leask
Office 225
2430/2440
Aztec West
Almondsbury
Bristol
BS32 4QA

Attention: Elliot Thomas

CERTIFICATE OF ANALYSIS

Date of report Generation:	20 January 2021
Customer:	Rodgers Leask
Sample Delivery Group (SDG):	201211-37
Your Reference:	P18-669
Location:	Llanwern
Report No:	583759

This report has been revised and directly supersedes 581847 in its entirety.

We received 15 samples on Friday December 11, 2020 and 15 of these samples were scheduled for analysis which was completed on Friday January 15, 2021. Accredited laboratory tests are defined within the report, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation.

Should this report require incorporation into client reports, it must be used in its entirety and not simply with the data sections alone.

Chemical testing (unless subcontracted) performed at ALS Life Sciences Ltd Hawarden (Method codes TM) or ALS Life Sciences Ltd Aberdeen (Method codes S).

All sample data is provided by the customer. The reported results relate to the sample supplied, and on the basis that this data is correct.
Incorrect sampling dates and/or sample information will affect the validity of results.
The customer is not permitted to reproduce this report except in full without the approval of the laboratory.

Approved By:

Sonia McWhan

Operations Manager

CERTIFICATE OF ANALYSIS

SDG:	201211-37	**Client Reference:**	P18-669	**Report Number:**	583759
Location:	Llanwern	**Order Number:**	108281	**Superseded Report:**	581847

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
23409588	M36-1		0.50 - 0.50	09/12/2020
23409597	M36-2		1.60 - 1.60	09/12/2020
23409612	M36-3		2.10 - 2.10	09/12/2020
23409536	M37-1		0.50 - 0.50	09/12/2020
23409582	M37-2		1.50 - 1.50	09/12/2020
23409548	N34-1		0.50 - 0.50	10/12/2020
23409554	N34-2		1.50 - 1.50	10/12/2020
23409621	N36-1		0.80 - 0.80	09/12/2020
23409629	N36-2		1.80 - 1.80	09/12/2020
23409576	O33-1		0.40 - 0.40	10/12/2020
23409561	O34-1		0.10 - 0.10	10/12/2020
23409568	O34-2		1.50 - 1.50	10/12/2020
23409642	O35-1		0.50 - 0.50	10/12/2020
23409650	O35-2		1.10 - 1.10	10/12/2020
23409542	O35-3		2.70 - 2.70	10/12/2020

Only received samples which have had analysis scheduled will be shown on the following pages.

					Validated

CERTIFICATE OF ANALYSIS

SDG:	201211-37	Client Reference:	P18-669	Report Number:	583759
Location:	Llanwern	Order Number:	108281	Superseded Report:	581847

Results Legend

- X Test
- N No Determination Possible

Sample Types -

S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
Lab Sample No(s)					23409588		23409597			23409612			23409536		23409582		23409548			23409554	23409621
Customer Sample Reference					M36-1		M36-2			M36-3			M37-1		M37-2		N34-1			N34-2	N36-1
AGS Reference																					
Depth (m)					0.50 - 0.50		1.60 - 1.60			2.10 - 2.10			0.50 - 0.50		1.50 - 1.50		0.50 - 0.50			1.50 - 1.50	0.80 - 0.80
Container			1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB with Handle (ALE260)
Sample Type			S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
Ammonium Soil by Titration	All	NDPs: 0 Tests: 15		X		X			X			X		X		X			X		
Asbestos ID in Solid Samples	All	NDPs: 1 Tests: 7	X					X			X							N			X
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 15		X		X			X			X		X		X			X		
EPH CWG GC (S)	All	NDPs: 0 Tests: 15		X		X			X			X		X		X			X		
GRO by GC-FID (S)	All	NDPs: 0 Tests: 15			X		X			X			X		X		X			X	
Metals in solid samples by OES	All	NDPs: 0 Tests: 15		X		X			X			X		X		X			X		
PAH by GCMS	All	NDPs: 0 Tests: 15		X		X			X			X		X		X			X		
pH	All	NDPs: 0 Tests: 15		X		X			X			X		X		X			X		
Phenols by HPLC (S)	All	NDPs: 0 Tests: 15		X		X			X			X		X		X			X		
Sample description	All	NDPs: 0 Tests: 15		X		X			X			X		X		X			X		
Total Organic Carbon	All	NDPs: 0 Tests: 15		X		X			X			X		X		X			X		
TPH CWG GC (S)	All	NDPs: 0 Tests: 15		X		X			X			X		X		X			X		
VOC MS (S)	All	NDPs: 0 Tests: 15			X		X			X			X		X		X			X	

23409542	O35-3		2.70 - 2.70	60g VOC (ALE215)	S						x										x
				250g Amber Jar (ALE210)	S	x		x	x		x	x	x	x	x	x	x	x		
				1kg TUB with Handle (ALE260)	S		x														
23409650	O35-2		1.10 - 1.10	60g VOC (ALE215)	S						x										x
				250g Amber Jar (ALE210)	S	x		x	x		x	x	x	x	x	x	x	x		
23409642	O35-1		0.50 - 0.50	60g VOC (ALE215)	S						x										x
				250g Amber Jar (ALE210)	S	x		x	x		x	x	x	x	x	x	x	x		
				1kg TUB with Handle (ALE260)	S		x														
23409568	O34-2		1.50 - 1.50	60g VOC (ALE215)	S						x										x
				250g Amber Jar (ALE210)	S	x		x	x		x	x	x	x	x	x	x	x		
				1kg TUB with Handle (ALE260)	S		x														
23409561	O34-1		0.10 - 0.10	60g VOC (ALE215)	S						x										x
				250g Amber Jar (ALE210)	S	x		x	x		x	x	x	x	x	x	x	x		
23409576	O33-1		0.40 - 0.40	60g VOC (ALE215)	S						x										x
				250g Amber Jar (ALE210)	S	x		x	x		x	x	x	x	x	x	x	x		
23409629	N36-2		1.80 - 1.80	60g VOC (ALE215)	S						x										x
				250g Amber Jar (ALE210)	S	x		x	x		x	x	x	x	x	x	x	x		
23409621	N36-1		0.80 - 0.80	60g VOC (ALE215)	S						x										x
				250g Amber Jar (ALE210)	S	x		x	x		x	x	x	x	x	x	x	x		

CERTIFICATE OF ANALYSIS

SDG:	201211-37	**Client Reference:**	P18-669	**Report Number:**	583759
Location:	Llanwern	**Order Number:**	108281	**Superseded Report:**	581847

Sample Descriptions

Grain Sizes

very fine	<0.063mm	**fine**	0.063mm - 0.1mm	**medium**	0.1mm - 2mm	**coarse**	2mm - 10mm	**very coarse**	>10mm

Lab Sample No(s)	Customer Sample Ref.	Depth (m)	Colour	Description	Inclusions	Inclusions 2
23409588	M36-1	0.50 - 0.50	Dark Brown	Loamy Sand	Stones	None
23409597	M36-2	1.60 - 1.60	Dark Brown	Sand	Stones	None
23409612	M36-3	2.10 - 2.10	Dark Brown	Sand	Stones	None
23409536	M37-1	0.50 - 0.50	Dark Brown	Silt Loam	Stones	None
23409582	M37-2	1.50 - 1.50	Dark Brown	Ballast	Stones	None
23409548	N34-1	0.50 - 0.50	Light Brown	Loamy Sand	Stones	None
23409554	N34-2	1.50 - 1.50	Dark Brown	Sand	Stones	None
23409621	N36-1	0.80 - 0.80	Dark Brown	Loamy Sand	Stones	None
23409629	N36-2	1.80 - 1.80	Light Brown	Ballast	Stones	None
23409576	O33-1	0.40 - 0.40	Dark Brown	Loamy Sand	Stones	None
23409561	O34-1	0.10 - 0.10	Light Brown	Loamy Sand	Stones	None
23409568	O34-2	1.50 - 1.50	Light Brown	Sand	Stones	None
23409642	O35-1	0.50 - 0.50	Light Brown	Sand	Stones	None
23409650	O35-2	1.10 - 1.10	Dark Brown	Loamy Sand	Stones	None
23409542	O35-3	2.70 - 2.70	Dark Brown	Sand	Stones	None

These descriptions are only intended to act as a cross check if sample identities are questioned, and to provide a log of sample matrices with respect to MCERTS validation. They are not intended as full geological descriptions.

We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally ocurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample.

Other coarse granular materials such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

Validated

CERTIFICATE OF ANALYSIS

SDG:	201211-37	**Client Reference:**	P18-669	**Report Number:**	583759
Location:	Llanwern	**Order Number:**	108281	**Superseded Report:**	581847

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	M36-1	M36-2	M36-3	M37-1	M37-2	N34-1
			Depth (m)	0.50 - 0.50	1.60 - 1.60	2.10 - 2.10	0.50 - 0.50	1.50 - 1.50	0.50 - 0.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	09/12/2020	09/12/2020	09/12/2020	09/12/2020	09/12/2020	10/12/2020
			Sample Time	.	.	.	.	.	.
			Date Received	11/12/2020	11/12/2020	11/12/2020	11/12/2020	11/12/2020	11/12/2020
			SDG Ref	201211-37	201211-37	201211-37	201211-37	201211-37	201211-37
			Lab Sample No.(s)	23409588	23409597	23409612	23409536	23409582	23409548
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		6.5	16	11	22	6.5	5.7
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	<12 M	<12 M	<12 M	<12 #	<12 M
Phenol	<0.01 mg/kg	TM062 (S)		0.0107 M	0.0238 M	<0.01 M	<0.01 M	<0.01 #	<0.01 M
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 #	<0.01 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 #	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 #	<0.035 M
Soil Organic Matter (SOM)	<0.35 %	TM132		2.64 #	11.2 #	0.743 #	15.6 #	1.54 #	1.14 #
pH	1 pH Units	TM133		12.2 M	12.2 M	12.1 M	8.05 M	12.7 #	9.82 M
Cyanide, Total	<1 mg/kg	TM153		<1 M	<1 M	<1 M	25.1 M	1.05 #	<1 M
Arsenic	<0.6 mg/kg	TM181		<6 M	<6 M	26.4 M	15.3 M	16.6 #	1.68 M
Cadmium	<0.02 mg/kg	TM181		<0.2 M	<0.2 M	0.223 M	10.3 M	1.82 #	0.245 M
Chromium	<0.9 mg/kg	TM181		340 M	644 M	229 M	<9 M	434 #	23.5 M
Copper	<1.4 mg/kg	TM181		<14 M	19.5 M	18.8 M	41.7 M	49.3 #	4.04 M
Iron	<1000 mg/kg	TM181		76500 #	117000 #	209000 #	267000 #	245000 #	12300 #
Lead	<0.7 mg/kg	TM181		30.9 M	28.8 M	50.7 M	2870 M	220 #	5.35 M
Manganese	<0.13 mg/kg	TM181		16700 M	29200 M	27300 M	6040 M	28900 #	1900 M
Mercury	<0.14 mg/kg	TM181		<1.4 M	<1.4 M	<1.4 M	1.41 M	<1.4 #	<0.14 M
Nickel	<0.2 mg/kg	TM181		5.58 M	10.8 M	53.1 M	36.9 M	60.6 #	37.9 M
Selenium	<1 mg/kg	TM181		10.5 #	17.4 #	14 #	<10 #	<10 #	<1 #
Vanadium	<0.2 mg/kg	TM181		277 #	523 #	233 #	71.7 #	1280 #	18.4 #
Zinc	<1.9 mg/kg	TM181		74.8 M	108 M	334 M	5610 M	458 #	39.5 M

Validated

CERTIFICATE OF ANALYSIS

SDG:	201211-37	**Client Reference:**	P18-669	**Report Number:**	583759
Location:	Llanwern	**Order Number:**	108281	**Superseded Report:**	581847

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	N34-2	N36-1	N36-2	O33-1	O34-1	O34-2
			Depth (m)	1.50 - 1.50	0.80 - 0.80	1.80 - 1.80	0.40 - 0.40	0.10 - 0.10	1.50 - 1.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	10/12/2020	09/12/2020	09/12/2020	10/12/2020	10/12/2020	10/12/2020
			Sample Time	.	.	.	.	.	.
			Date Received	11/12/2020	11/12/2020	11/12/2020	11/12/2020	11/12/2020	11/12/2020
			SDG Ref	201211-37	201211-37	201211-37	201211-37	201211-37	201211-37
			Lab Sample No.(s)	23409554	23409621	23409629	23409576	23409561	23409568
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		11	6.7	8.2	4.5	4.2	4.1
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	<12 M	<12 #	<12 M	<12 M	<12 M
Phenol	<0.01 mg/kg	TM062 (S)		0.0112 M	<0.01 M	<0.01 #	<0.01 M	<0.01 M	<0.01 M
Cresols	<0.01 mg/kg	TM062 (S)		0.0112 M	<0.01 M	<0.01 #	<0.01 M	<0.01 M	<0.01 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M	<0.015 #	<0.015 M	<0.015 M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 M	<0.035 #	<0.035 M	<0.035 M	<0.035 M
Soil Organic Matter (SOM)	<0.35 %	TM132		1.74 #	1.95 #	0.386 #	4.31 #	0.909 #	0.464 #
pH	1 pH Units	TM133		12.2 M	10.7 M	11.7 #	11.1 M	11.5 M	12.7 M
Cyanide, Total	<1 mg/kg	TM153		<1 M	<1 M	<1 #	<1 M	<1 M	<1 M
Arsenic	<0.6 mg/kg	TM181		35.4 M	8.24 M	<6 #	20.3 M	0.715 M	<6 M
Cadmium	<0.02 mg/kg	TM181		<0.2 M	<0.2 M	<0.2 #	2.45 M	0.135 M	<0.2 M
Chromium	<0.9 mg/kg	TM181		444 M	356 M	18.3 #	92.7 M	156 M	1140 M
Copper	<1.4 mg/kg	TM181		141 M	20.5 M	<14 #	20.5 M	3.67 M	<14 M
Iron	<1000 mg/kg	TM181		237000 #	98800 #	43100 #	253000 #	51200 #	227000 #
Lead	<0.7 mg/kg	TM181		35.1 M	52.2 M	<0.7 #	248 M	<0.7 M	19.2 M
Manganese	<0.13 mg/kg	TM181		10500 M	10800 M	4760 #	15000 M	9790 M	45300 M
Mercury	<0.14 mg/kg	TM181		<1.4 M	<1.4 M	<1.4 #	<1.4 M	<0.14 M	<1.4 M
Nickel	<0.2 mg/kg	TM181		268 M	27.1 M	3.15 #	24.3 M	9.54 M	6.02 M
Selenium	<1 mg/kg	TM181		<10 #	<10 #	<10 #	<10 #	1.18 #	26.8 #
Vanadium	<0.2 mg/kg	TM181		145 #	232 #	17 #	136 #	114 #	831 #
Zinc	<1.9 mg/kg	TM181		70.5 M	208 M	37.5 #	707 M	25.3 M	49.4 M

Validated

CERTIFICATE OF ANALYSIS

SDG:	201211-37	**Client Reference:**	P18-669	**Report Number:**	583759
Location:	Llanwern	**Order Number:**	108281	**Superseded Report:**	581847

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	O35-1	O35-2	O35-3			
			Depth (m)	0.50 - 0.50	1.10 - 1.10	2.70 - 2.70			
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)			
			Date Sampled	10/12/2020	10/12/2020	10/12/2020			
			Sample Time	.	.	.			
			Date Received	11/12/2020	11/12/2020	11/12/2020			
			SDG Ref	201211-37	201211-37	201211-37			
			Lab Sample No.(s)	23409642	23409650	23409542			
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		4.4	6.9	8.3			
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	<12 M	<12 M			
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M			
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 M	0.0322 M	<0.01 M			
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M	<0.015 M			
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 M	<0.035 M			
Soil Organic Matter (SOM)	<0.35 %	TM132		<0.35 #	0.683 #	0.353 #			
pH	1 pH Units	TM133		9.2 M	12.5 M	11.9 M			
Cyanide, Total	<1 mg/kg	TM153		<1 M	<1 M	<1 M			
Arsenic	<0.6 mg/kg	TM181		2.47 M	8.69 M	<6 M			
Cadmium	<0.02 mg/kg	TM181		0.139 M	<0.2 M	<0.2 M			
Chromium	<0.9 mg/kg	TM181		3.31 M	504 M	95.8 M			
Copper	<1.4 mg/kg	TM181		7.43 M	29.1 M	<14 M			
Iron	<1000 mg/kg	TM181		1530 #	111000 #	334000 #			
Lead	<0.7 mg/kg	TM181		8.56 M	29 M	12.8 M			
Manganese	<0.13 mg/kg	TM181		111 M	22600 M	13000 M			
Mercury	<0.14 mg/kg	TM181		<0.14 M	<1.4 M	<1.4 M			
Nickel	<0.2 mg/kg	TM181		1.87 M	28.7 M	17.1 M			
Selenium	<1 mg/kg	TM181		<1 #	12.6 #	<10 #			
Vanadium	<0.2 mg/kg	TM181		3.86 #	413 #	202 #			
Zinc	<1.9 mg/kg	TM181		12.5 M	62.2 M	34.1 M			

Validated

CERTIFICATE OF ANALYSIS

SDG:	201211-37	**Client Reference:**	P18-669	**Report Number:**	583759
Location:	Llanwern	**Order Number:**	108281	**Superseded Report:**	581847

PAH by GCMS

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	M36-1	M36-2	M36-3	M37-1	M37-2	N34-1
			Depth (m)	0.50 - 0.50	1.60 - 1.60	2.10 - 2.10	0.50 - 0.50	1.50 - 1.50	0.50 - 0.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	09/12/2020	09/12/2020	09/12/2020	09/12/2020	09/12/2020	10/12/2020
			Sample Time	.	.	.	.	.	.
			Date Received	11/12/2020	11/12/2020	11/12/2020	11/12/2020	11/12/2020	11/12/2020
			SDG Ref	201211-37	201211-37	201211-37	201211-37	201211-37	201211-37
			Lab Sample No.(s)	23409588	23409597	23409612	23409536	23409582	23409548
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		82.5	79.8	82	78	80	80
Acenaphthene-d10 % recovery**	%	TM218		83.2	79.4	81.1	79.7	80.7	79.8
Phenanthrene-d10 % recovery**	%	TM218		84.1	78.7	84.5	69	83.2	80.2
Chrysene-d12 % recovery**	%	TM218		91	78.3	86.9	34.1	85.8	80.6
Perylene-d12 % recovery**	%	TM218		99.6	87.9	82.3	16.7	91.3	86.8
Naphthalene	<9 µg/kg	TM218		69.7 M	211 M	41.4 M	161 M	13.7 #	57.6 M
Acenaphthylene	<12 µg/kg	TM218		<12 M	<60 M	<12 M	<12 M	<12 #	18.4 M
Acenaphthene	<8 µg/kg	TM218		110 M	405 M	51.1 M	<8 M	31.4 #	<8 M
Fluorene	<10 µg/kg	TM218		38.5 M	126 M	17.9 M	27.7 M	11.7 #	11.7 M
Phenanthrene	<15 µg/kg	TM218		416 M	1520 M	276 M	232 M	1050 #	88.4 M
Anthracene	<16 µg/kg	TM218		97.6 M	364 M	60.3 M	60.1 M	76.9 #	27.3 M
Fluoranthene	<17 µg/kg	TM218		1260 M	4730 M	742 M	167 M	1990 #	133 M
Pyrene	<15 µg/kg	TM218		1270 M	4170 M	652 M	203 M	1750 #	101 M
Benz(a)anthracene	<14 µg/kg	TM218		1030 M	3200 M	429 M	35.3 M	937 #	73.9 M
Chrysene	<10 µg/kg	TM218		1010 M	2980 M	473 M	34.4 M	1000 #	61.7 M
Benzo(b)fluoranthene	<15 µg/kg	TM218		1850 M	4600 M	752 M	37.8 M	904 #	83.6 M
Benzo(k)fluoranthene	<14 µg/kg	TM218		685 M	1850 M	294 M	<14 M	580 #	31.7 M
Benzo(a)pyrene	<15 µg/kg	TM218		1240 M	4150 M	458 M	<15 M	1100 #	65.3 M
Indeno(1,2,3-cd)pyrene	<18 µg/kg	TM218		1190 M	3510 M	426 M	<18 M	799 #	51 M
Dibenzo(a,h)anthracene	<23 µg/kg	TM218		199 M	627 M	78.7 M	<23 M	132 #	<23 M
Benzo(g,h,i)perylene	<24 µg/kg	TM218		1130 M	3190 M	396 M	<24 M	824 #	54.1 M
PAH, Total Detected USEPA 16	<118 µg/kg	TM218		11600	35600	5150	959	11200	859

Validated

CERTIFICATE OF ANALYSIS

SDG:	201211-37	**Client Reference:**	P18-669	**Report Number:**	583759
Location:	Llanwern	**Order Number:**	108281	**Superseded Report:**	581847

PAH by GCMS

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	N34-2	N36-1	N36-2	O33-1	O34-1	O34-2
			Depth (m)	1.50 - 1.50	0.80 - 0.80	1.80 - 1.80	0.40 - 0.40	0.10 - 0.10	1.50 - 1.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	10/12/2020	09/12/2020	09/12/2020	10/12/2020	10/12/2020	10/12/2020
			Sample Time	.	.	.	.	.	.
			Date Received	11/12/2020	11/12/2020	11/12/2020	11/12/2020	11/12/2020	11/12/2020
			SDG Ref	201211-37	201211-37	201211-37	201211-37	201211-37	201211-37
			Lab Sample No.(s)	23409554	23409621	23409629	23409576	23409561	23409568
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		80	81.5	83.4	82	83.4	82.5
Acenaphthene-d10 % recovery**	%	TM218		80.7	80.8	83.9	82.3	82.7	82.2
Phenanthrene-d10 % recovery**	%	TM218		82.6	80.9	85.4	82.7	81.6	82.2
Chrysene-d12 % recovery**	%	TM218		81	83.4	83.7	73.6	79.4	82.3
Perylene-d12 % recovery**	%	TM218		85.9	86.9	89.4	75.3	77	87.7
Naphthalene	<9 µg/kg	TM218		44.8 M	37.2 M	<9 #	246 M	60.6 M	14.8 M
Acenaphthylene	<12 µg/kg	TM218		<12 M	17.1 M	<12 #	146 M	13.2 M	<12 M
Acenaphthene	<8 µg/kg	TM218		<8 M	<8 M	<8 #	<40 M	<8 M	<8 M
Fluorene	<10 µg/kg	TM218		12.4 M	13.9 M	<10 #	65.5 M	<10 M	<10 M
Phenanthrene	<15 µg/kg	TM218		90 M	77.3 M	75.9 #	647 M	76.1 M	87.2 M
Anthracene	<16 µg/kg	TM218		18.8 M	23.2 M	<16 #	191 M	17.1 M	<16 M
Fluoranthene	<17 µg/kg	TM218		107 M	125 M	61.5 #	1180 M	87.8 M	121 M
Pyrene	<15 µg/kg	TM218		87.2 M	102 M	43.5 #	937 M	61.6 M	99.2 M
Benz(a)anthracene	<14 µg/kg	TM218		52.5 M	72.6 M	<14 #	575 M	34.6 M	70.5 M
Chrysene	<10 µg/kg	TM218		44.4 M	61.2 M	<10 #	506 M	40.6 M	79.8 M
Benzo(b)fluoranthene	<15 µg/kg	TM218		74.1 M	115 M	<15 #	631 M	52.2 M	95.2 M
Benzo(k)fluoranthene	<14 µg/kg	TM218		27.9 M	36.1 M	<14 #	245 M	15.4 M	27.2 M
Benzo(a)pyrene	<15 µg/kg	TM218		51.5 M	67.3 M	<15 #	476 M	25.1 M	75.2 M
Indeno(1,2,3-cd)pyrene	<18 µg/kg	TM218		36.8 M	58.7 M	<18 #	354 M	25.4 M	59.9 M
Dibenzo(a,h)anthracene	<23 µg/kg	TM218		<23 M	<23 M	<23 #	<115 M	<23 M	<23 M
Benzo(g,h,i)perylene	<24 µg/kg	TM218		41 M	53.8 M	<24 #	363 M	<24 M	63.1 M
PAH, Total Detected USEPA 16	<118 µg/kg	TM218		688	860	181	6570	510	793

Validated

CERTIFICATE OF ANALYSIS

SDG:	201211-37	**Client Reference:**	P18-669	**Report Number:**	583759
Location:	Llanwern	**Order Number:**	108281	**Superseded Report:**	581847

PAH by GCMS

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	O35-1	O35-2	O35-3			
			Depth (m)	0.50 - 0.50	1.10 - 1.10	2.70 - 2.70			
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)			
			Date Sampled	10/12/2020	10/12/2020	10/12/2020			
			Sample Time	.	.	.			
			Date Received	11/12/2020	11/12/2020	11/12/2020			
			SDG Ref	201211-37	201211-37	201211-37			
			Lab Sample No.(s)	23409642	23409650	23409542			
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		81.6	83.5	80.8			
Acenaphthene-d10 % recovery**	%	TM218		81.3	82.4	80.5			
Phenanthrene-d10 % recovery**	%	TM218		82.1	81.6	80.5			
Chrysene-d12 % recovery**	%	TM218		80.1	87.4	81.3			
Perylene-d12 % recovery**	%	TM218		84.4	92.5	87.9			
Naphthalene	<9 µg/kg	TM218		<9 M	13.4 M	<9 M			
Acenaphthylene	<12 µg/kg	TM218		<12 M	<12 M	<12 M			
Acenaphthene	<8 µg/kg	TM218		<8 M	20.9 M	<8 M			
Fluorene	<10 µg/kg	TM218		<10 M	<10 M	<10 M			
Phenanthrene	<15 µg/kg	TM218		17.4 M	108 M	<15 M			
Anthracene	<16 µg/kg	TM218		<16 M	17.2 M	<16 M			
Fluoranthene	<17 µg/kg	TM218		<17 M	219 M	34.1 M			
Pyrene	<15 µg/kg	TM218		<15 M	185 M	31.6 M			
Benz(a)anthracene	<14 µg/kg	TM218		<14 M	134 M	18 M			
Chrysene	<10 µg/kg	TM218		<10 M	119 M	17.4 M			
Benzo(b)fluoranthene	<15 µg/kg	TM218		<15 M	219 M	21 M			
Benzo(k)fluoranthene	<14 µg/kg	TM218		<14 M	83.7 M	<14 M			
Benzo(a)pyrene	<15 µg/kg	TM218		<15 M	156 M	<15 M			
Indeno(1,2,3-cd)pyrene	<18 µg/kg	TM218		<18 M	134 M	<18 M			
Dibenzo(a,h)anthracene	<23 µg/kg	TM218		<23 M	<23 M	<23 M			
Benzo(g,h,i)perylene	<24 µg/kg	TM218		<24 M	136 M	<24 M			
PAH, Total Detected USEPA 16	<118 µg/kg	TM218		<118	1540	122			

Validated

CERTIFICATE OF ANALYSIS

SDG:	201211-37	**Client Reference:**	P18-669	**Report Number:**	583759
Location:	Llanwern	**Order Number:**	108281	**Superseded Report:**	581847

TPH CWG (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	M36-1	M36-2	M36-3	M37-1	M37-2	N34-1
			Depth (m)	0.50 - 0.50	1.60 - 1.60	2.10 - 2.10	0.50 - 0.50	1.50 - 1.50	0.50 - 0.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	09/12/2020	09/12/2020	09/12/2020	09/12/2020	09/12/2020	10/12/2020
			Sample Time	.	.	.	.	.	.
			Date Received	11/12/2020	11/12/2020	11/12/2020	11/12/2020	11/12/2020	11/12/2020
			SDG Ref	201211-37	201211-37	201211-37	201211-37	201211-37	201211-37
			Lab Sample No.(s)	23409588	23409597	23409612	23409536	23409582	23409548
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		93.4 @	92.2 @	104 @	71.8 @	96.9 @	86.8 @
Aliphatics >C5-C6	<10 µg/kg	TM089		<10 @	17.9 @	<10 @	<10 @	<10 @	<10 @
Aliphatics >C6-C8	<10 µg/kg	TM089		<10 @	17.9 @	<10 @	<10 @	<10 @	<10 @
Aliphatics >C8-C10	<10 µg/kg	TM089		<10 @	21.4 @	<10 @	<10 @	<10 @	<10 @
Aliphatics >C10-C12	<1000 µg/kg	TM414		<1000	<1000	<1000	<1000	<1000	<1000
Aliphatics >C12-C16	<1000 µg/kg	TM414		2840	7530	4190	1020	1060	<1000
Aliphatics >C16-C21	<1000 µg/kg	TM414		16400	39100	8320	46300	6120	1010
Aliphatics >C21-C35	<1000 µg/kg	TM414		83000	148000	34200	103000	65200	19100
Aliphatics >C35-C44	<1000 µg/kg	TM414		25500	43500	6270	3590	41200	2480
Total Aliphatics >C10-C44	<5000 µg/kg	TM414		128000	238000	53000	154000	114000	22600
Total Aliphatics & Aromatics >C10-C44	<10000 µg/kg	TM414		179000	323000	63600	186000	174000	36700
Aromatics >EC5-EC7	<10 µg/kg	TM089		<10 @	<10 @	<10 @	<10 @	<10 @	<10 @
Aromatics >EC7-EC8	<10 µg/kg	TM089		<10 @	<10 @	<10 @	<10 @	<10 @	<10 @
Aromatics >EC8-EC10	<10 µg/kg	TM089		<10 @	14.3 @	<10 @	<10 @	<10 @	<10 @
Aromatics > EC10-EC12	<1000 µg/kg	TM414		<1000	<1000	<1000	<1000	<1000	<1000
Aromatics > EC12-EC16	<1000 µg/kg	TM414		<1000	1470	<1000	<1000	<1000	<1000
Aromatics > EC16-EC21	<1000 µg/kg	TM414		6510	12600	1400	3740	10300	<1000
Aromatics > EC21-EC35	<1000 µg/kg	TM414		35200	57600	7910	26000	44200	12500
Aromatics >EC35-EC44	<1000 µg/kg	TM414		7790	12800	1140	<1000	5970	<1000
Aromatics > EC40-EC44	<1000 µg/kg	TM414		1100	2160	<1000	<1000	<1000	<1000
Total Aromatics > EC10-EC44	<5000 µg/kg	TM414		50100	84600	10600	31300	60600	14200
Total Aliphatics & Aromatics >C5-C44	<10000 µg/kg	TM414		179000	323000	63600	186000	174000	36700
Total Aliphatics >C5-C10	<50 µg/kg	TM089		<50 @	57.1 @	<50 @	<50 @	<50 @	<50 @
Total Aromatics >EC5-EC10	<50 µg/kg	TM089		<50 @	<50 @	<50 @	<50 @	<50 @	<50 @
GRO >C5-C10	<20 µg/kg	TM089		<20 @	57.1 @	<20 @	<20 @	<20 @	<20 @

Validated

CERTIFICATE OF ANALYSIS

SDG:	201211-37	**Client Reference:**	P18-669	**Report Number:**	583759
Location:	Llanwern	**Order Number:**	108281	**Superseded Report:**	581847

TPH CWG (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	N34-2	N36-1	N36-2	O33-1	O34-1	O34-2
			Depth (m)	1.50 - 1.50	0.80 - 0.80	1.80 - 1.80	0.40 - 0.40	0.10 - 0.10	1.50 - 1.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	10/12/2020	09/12/2020	09/12/2020	10/12/2020	10/12/2020	10/12/2020
			Sample Time	.	.	.	.	.	.
			Date Received	11/12/2020	11/12/2020	11/12/2020	11/12/2020	11/12/2020	11/12/2020
			SDG Ref	201211-37	201211-37	201211-37	201211-37	201211-37	201211-37
			Lab Sample No.(s)	23409554	23409621	23409629	23409576	23409561	23409568
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		97.5 @	96 @	105 @	61.8 4 @	99 @	120 @
Aliphatics >C5-C6	<10 µg/kg	TM089		45.9 @	<10 @	<10 @	<10 4 @	<10 @	<10 @
Aliphatics >C6-C8	<10 µg/kg	TM089		86.2 @	<10 @	<10 @	<10 4 @	<10 @	<10 @
Aliphatics >C8-C10	<10 µg/kg	TM089		54.9 @	<10 @	16.3 @	<10 4 @	<10 @	<10 @
Aliphatics >C10-C12	<1000 µg/kg	TM414		<1000	<1000	<1000	<1000	<1000	<1000
Aliphatics >C12-C16	<1000 µg/kg	TM414		1030	<1000	12000	<1000	<1000	<1000
Aliphatics >C16-C21	<1000 µg/kg	TM414		11000	3840	17800	4050	<1000	6480
Aliphatics >C21-C35	<1000 µg/kg	TM414		84100	42000	14500	31700	10700	53000
Aliphatics >C35-C44	<1000 µg/kg	TM414		18600	5360	2870	9620	<1000	7220
Total Aliphatics >C10-C44	<5000 µg/kg	TM414		115000	51600	47100	45700	11700	67400
Total Aliphatics & Aromatics >C10-C44	<10000 µg/kg	TM414		135000	63700	49600	72000	15100	76300
Aromatics >EC5-EC7	<10 µg/kg	TM089		<10 @	<10 @	<10 @	<10 4 @	<10 @	<10 @
Aromatics >EC7-EC8	<10 µg/kg	TM089		<10 @	<10 @	<10 @	<10 4 @	<10 @	<10 @
Aromatics >EC8-EC10	<10 µg/kg	TM089		35.8 @	<10 @	10.9 @	<10 4 @	<10 @	<10 @
Aromatics > EC10-EC12	<1000 µg/kg	TM414		<1000	<1000	<1000	<1000	<1000	<1000
Aromatics > EC12-EC16	<1000 µg/kg	TM414		<1000	<1000	<1000	<1000	<1000	<1000
Aromatics > EC16-EC21	<1000 µg/kg	TM414		<1000	<1000	<1000	4110	<1000	<1000
Aromatics > EC21-EC35	<1000 µg/kg	TM414		17800	10300	1050	18900	2320	7660
Aromatics >EC35-EC44	<1000 µg/kg	TM414		1260	<1000	<1000	2640	<1000	<1000
Aromatics > EC40-EC44	<1000 µg/kg	TM414		<1000	<1000	<1000	1340	<1000	<1000
Total Aromatics > EC10-EC44	<5000 µg/kg	TM414		19600	12200	<5000	26300	<5000	8920
Total Aliphatics & Aromatics >C5-C44	<10000 µg/kg	TM414		135000	63700	47100	72000	11700	76300
Total Aliphatics >C5-C10	<50 µg/kg	TM089		187 @	<50 @	<50 @	<50 4 @	<50 @	<50 @
Total Aromatics >EC5-EC10	<50 µg/kg	TM089		<50 @	<50 @	<50 @	<50 4 @	<50 @	<50 @
GRO >C5-C10	<20 µg/kg	TM089		187 @	<20 @	<20 @	<20 4 @	<20 @	<20 @

Validated

CERTIFICATE OF ANALYSIS

SDG:	201211-37	**Client Reference:**	P18-669	**Report Number:**	583759
Location:	Llanwern	**Order Number:**	108281	**Superseded Report:**	581847

TPH CWG (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	O35-1	O35-2	O35-3			
			Depth (m)	0.50 - 0.50	1.10 - 1.10	2.70 - 2.70			
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)			
			Date Sampled	10/12/2020	10/12/2020	10/12/2020			
			Sample Time	.	.	.			
			Date Received	11/12/2020	11/12/2020	11/12/2020			
			SDG Ref	201211-37	201211-37	201211-37			
			Lab Sample No.(s)	23409642	23409650	23409542			
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		89.5 @	99.9 @	113 @			
Aliphatics >C5-C6	<10 µg/kg	TM089		<10 @	<10 @	<10 @			
Aliphatics >C6-C8	<10 µg/kg	TM089		<10 @	<10 @	<10 @			
Aliphatics >C8-C10	<10 µg/kg	TM089		<10 @	<10 @	<10 @			
Aliphatics >C10-C12	<1000 µg/kg	TM414		<1000	<1000	<1000			
Aliphatics >C12-C16	<1000 µg/kg	TM414		<1000	<1000	<1000			
Aliphatics >C16-C21	<1000 µg/kg	TM414		<1000	6140	2070			
Aliphatics >C21-C35	<1000 µg/kg	TM414		<1000	72800	20200			
Aliphatics >C35-C44	<1000 µg/kg	TM414		<1000	13600	1070			
Total Aliphatics >C10-C44	<5000 µg/kg	TM414		<5000	92900	23400			
Total Aliphatics & Aromatics >C10-C44	<10000 µg/kg	TM414		<10000	107000	26400			
Aromatics >EC5-EC7	<10 µg/kg	TM089		<10 @	<10 @	<10 @			
Aromatics >EC7-EC8	<10 µg/kg	TM089		<10 @	<10 @	<10 @			
Aromatics >EC8-EC10	<10 µg/kg	TM089		<10 @	<10 @	<10 @			
Aromatics > EC10-EC12	<1000 µg/kg	TM414		<1000	<1000	<1000			
Aromatics > EC12-EC16	<1000 µg/kg	TM414		<1000	<1000	<1000			
Aromatics > EC16-EC21	<1000 µg/kg	TM414		<1000	<1000	<1000			
Aromatics > EC21-EC35	<1000 µg/kg	TM414		1370	12800	1720			
Aromatics >EC35-EC44	<1000 µg/kg	TM414		<1000	<1000	<1000			
Aromatics > EC40-EC44	<1000 µg/kg	TM414		<1000	<1000	<1000			
Total Aromatics > EC10-EC44	<5000 µg/kg	TM414		<5000	14600	<5000			
Total Aliphatics & Aromatics >C5-C44	<10000 µg/kg	TM414		<10000	107000	23400			
Total Aliphatics >C5-C10	<50 µg/kg	TM089		<50 @	<50 @	<50 @			
Total Aromatics >EC5-EC10	<50 µg/kg	TM089		<50 @	<50 @	<50 @			
GRO >C5-C10	<20 µg/kg	TM089		<20 @	<20 @	<20 @			

Validated

CERTIFICATE OF ANALYSIS

SDG:	201211-37	**Client Reference:**	P18-669	**Report Number:**	583759
Location:	Llanwern	**Order Number:**	108281	**Superseded Report:**	581847

VOC MS (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	M36-1	M36-2	M36-3	M37-1	M37-2	N34-1
			Depth (m)	0.50 - 0.50	1.60 - 1.60	2.10 - 2.10	0.50 - 0.50	1.50 - 1.50	0.50 - 0.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	09/12/2020	09/12/2020	09/12/2020	09/12/2020	09/12/2020	10/12/2020
			Sample Time	.	.	.	.	.	.
			Date Received	11/12/2020	11/12/2020	11/12/2020	11/12/2020	11/12/2020	11/12/2020
			SDG Ref	201211-37	201211-37	201211-37	201211-37	201211-37	201211-37
			Lab Sample No.(s)	23409588	23409597	23409612	23409536	23409582	23409548
			AGS Reference						
Dibromofluoromethane**	%	TM116		108 @	106 @	108 @	108 @	105 @	110 @
Toluene-d8**	%	TM116		94.5 @	94.1 @	95 @	93.4 @	95.2 @	94.1 @
4-Bromofluorobenzene**	%	TM116		96.6 @	97.2 @	97.5 @	90.6 @	101 @	96.9 @
Methyl Tertiary Butyl Ether	<10 µg/kg	TM116		<200 @ M	<200 @ M	<200 @ M	<200 @ M	<200 @ #	<200 @ M
Benzene	<9 µg/kg	TM116		<180 @ M	<180 @ M	<180 @ M	<180 @ M	<180 @ #	<180 @ M
Toluene	<7 µg/kg	TM116		<140 @ M	<140 @ M	<140 @ M	<140 @ M	<140 @ #	<140 @ M
Ethylbenzene	<4 µg/kg	TM116		<80 @ M	<80 @ M	<80 @ M	<80 @ M	<80 @ #	<80 @ M
p/m-Xylene	<10 µg/kg	TM116		<200 @ #	<200 @ #	<200 @ #	<200 @ #	<200 @ #	<200 @ #
o-Xylene	<10 µg/kg	TM116		<200 @ M	<200 @ M	<200 @ M	<200 @ M	<200 @ #	<200 @ M
Naphthalene	<13 µg/kg	TM116		<13 M	<13 M	<13 M	<260 M	<260 #	<13 M
Sum of Detected Xylenes	<0.02 mg/kg	TM116		<0.4 @	<0.4 @	<0.4 @	<0.4 @	<0.4 @	<0.4 @
Sum of BTEX	<40 µg/kg	TM116		<800 @	<800 @	<800 @	<800 @	<800 @	<800 @

Validated

CERTIFICATE OF ANALYSIS

SDG:	201211-37	**Client Reference:**	P18-669	**Report Number:**	583759
Location:	Llanwern	**Order Number:**	108281	**Superseded Report:**	581847

VOC MS (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	N34-2	N36-1	N36-2	O33-1	O34-1	O34-2
			Depth (m)	1.50 - 1.50	0.80 - 0.80	1.80 - 1.80	0.40 - 0.40	0.10 - 0.10	1.50 - 1.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	10/12/2020	09/12/2020	09/12/2020	10/12/2020	10/12/2020	10/12/2020
			Sample Time	.	.	.	.	.	.
			Date Received	11/12/2020	11/12/2020	11/12/2020	11/12/2020	11/12/2020	11/12/2020
			SDG Ref	201211-37	201211-37	201211-37	201211-37	201211-37	201211-37
			Lab Sample No.(s)	23409554	23409621	23409629	23409576	23409561	23409568
			AGS Reference						
Dibromofluoromethane**	%	TM116		107 @	108 @	109 @	105 @	106 @	108 @
Toluene-d8**	%	TM116		94.9 @	95.3 @	95.6 @	92.7 @	95.2 @	95.7 @
4-Bromofluorobenzene**	%	TM116		98.3 @	97.1 @	99.6 @	91.3 @	98.3 @	101 @
Methyl Tertiary Butyl Ether	<10 µg/kg	TM116		<200 @ M	<200 @ M	<200 @ #	<200 @ M	<200 @ M	<200 @ M
Benzene	<9 µg/kg	TM116		<180 @ M	<180 @ M	<180 @ #	<180 @ M	<180 @ M	<180 @ M
Toluene	<7 µg/kg	TM116		<140 @ M	<140 @ M	<140 @ #	<140 @ M	<140 @ M	<140 @ M
Ethylbenzene	<4 µg/kg	TM116		<80 @ M	<80 @ M	<80 @ #	<80 @ M	<80 @ M	<80 @ M
p/m-Xylene	<10 µg/kg	TM116		<200 @ #	<200 @ #	<200 @ #	<200 @ #	<200 @ #	<200 @ #
o-Xylene	<10 µg/kg	TM116		<200 @ M	<200 @ M	<200 @ #	<200 @ M	<200 @ M	<200 @ M
Naphthalene	<13 µg/kg	TM116		17.1 M	16.8 M	<13 #	<260 M	<13 M	<13 M
Sum of Detected Xylenes	<0.02 mg/kg	TM116		<0.4 @	<0.4 @	<0.4 @	<0.4 @	<0.4 @	<0.4 @
Sum of BTEX	<40 µg/kg	TM116		<800 @	<800 @	<800 @	<800 @	<800 @	<800 @

CERTIFICATE OF ANALYSIS

SDG:	201211-37	**Client Reference:**	P18-669	**Report Number:**	583759
Location:	Llanwern	**Order Number:**	108281	**Superseded Report:**	581847

VOC MS (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	O35-1	O35-2	O35-3
			Depth (m)	0.50 - 0.50	1.10 - 1.10	2.70 - 2.70
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	10/12/2020	10/12/2020	10/12/2020
			Sample Time	.	.	.
			Date Received	11/12/2020	11/12/2020	11/12/2020
			SDG Ref	201211-37	201211-37	201211-37
			Lab Sample No.(s)	23409642	23409650	23409542
			AGS Reference			
Dibromofluoromethane**	%	TM116		106 @	106 @	107 @
Toluene-d8**	%	TM116		95.2 @	95.2 @	94.6 @
4-Bromofluorobenzene**	%	TM116		100 @	100 @	99.8 @
Methyl Tertiary Butyl Ether	<10 µg/kg	TM116		<200 @ M	<200 @ M	<200 @ M
Benzene	<9 µg/kg	TM116		<180 @ M	<180 @ M	<180 @ M
Toluene	<7 µg/kg	TM116		<140 @ M	<140 @ M	<140 @ M
Ethylbenzene	<4 µg/kg	TM116		<80 @ M	<80 @ M	<80 @ M
p/m-Xylene	<10 µg/kg	TM116		<200 @ #	<200 @ #	<200 @ #
o-Xylene	<10 µg/kg	TM116		<200 @ M	<200 @ M	<200 @ M
Naphthalene	<13 µg/kg	TM116		<13 M	<13 M	<13 M
Sum of Detected Xylenes	<0.02 mg/kg	TM116		<0.4 @	<0.4 @	<0.4 @
Sum of BTEX	<40 µg/kg	TM116		<800 @	<800 @	<800 @

CERTIFICATE OF ANALYSIS

SDG:	201211-37	**Client Reference:**	P18-669	**Report Number:**	583759
Location:	Llanwern	**Order Number:**	108281	**Superseded Report:**	581847

Asbestos Identification - Solid Samples

Results Legend

#	ISO17025 accredited.
M	*m*CERTS accredited.
*	Subcontracted test.
(F)	Trigger breach confirmed
1-5&+$@	Sample deviation (see appendix)

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthophyllite	Fibrous Tremolite	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	M36-1 0.50 - 0.50 SOLID 09/12/2020 00:00:00 11/12/2020 05:00:00 201211-37 23409588 TM048	17/12/2020	Barbara Urbanek-Walsh	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	M36-3 2.10 - 2.10 SOLID 09/12/2020 00:00:00 11/12/2020 05:00:00 201211-37 23409612 TM048	18/12/2020	Agnieszka Chelmowska	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	M37-1 0.50 - 0.50 SOLID 09/12/2020 00:00:00 11/12/2020 05:00:00 201211-37 23409536 TM048	17/12/2020	Marcin Magdziarek	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	N36-1 0.80 - 0.80 SOLID 09/12/2020 00:00:00 11/12/2020 05:00:00 201211-37 23409621 TM048	17/12/2020	Barbara Urbanek-Walsh	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	O34-2 1.50 - 1.50 SOLID 10/12/2020 00:00:00 11/12/2020 05:00:00 201211-37 23409568 TM048	17/12/2020	Marcin Magdziarek	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	O35-1 0.50 - 0.50 SOLID 10/12/2020 00:00:00 11/12/2020 05:00:00 201211-37 23409642 TM048	18/12/2020	Christian Hallam	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	O35-3 2.70 - 2.70 SOLID 10/12/2020 00:00:00 11/12/2020 05:00:00 201211-37 23409542 TM048	18/12/2020	Barbara Urbanek-Walsh	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected

CERTIFICATE OF ANALYSIS

SDG:	201211-37	**Client Reference:**	P18-669	**Report Number:**	583759
Location:	Llanwern	**Order Number:**	108281	**Superseded Report:**	581847

Notification of NDPs (No determination possible)

Date Received : 11/12/2020 07:49:07

Sample No	Customer Sample Ref.	Depth (m)	Test	Comment
23409554	N34-2	1.50 - 1.50	Asbestos ID in Solid Samples	Sample unsuitable for analysis

CERTIFICATE OF ANALYSIS

SDG:	201211-37	**Client Reference:**	P18-669	**Report Number:**	583759
Location:	Llanwern	**Order Number:**	108281	**Superseded Report:**	581847

Table of Results - Appendix

Method No	Reference	Description
PM024	Modified BS 1377	Soil preparation including homogenisation, moisture screens of soils for Asbestos Containing Material
TM024	Method 4500A & B, AWWA/APHA, 20th Ed., 1999	Determination of Exchangeable Ammonium and Ammoniacal Nitrogen as N by titration on solids
TM048	HSG 248, Asbestos: The analysts' guide for sampling, analysis and clearance procedures	Identification of Asbestos in Bulk Material
TM062 (S)	National Grid Property Holdings Methods for the Collection & Analysis of Samples from National Grid Sites version 1 Sec 3.9	Determination of Phenols in Soils by HPLC
TM089	Modified: US EPA Methods 8020 & 602	Determination of Gasoline Range Hydrocarbons (GRO) by Headspace GC-FID (C4-C12)
TM116	Modified: US EPA Method 8260, 8120, 8020, 624, 610 & 602	Determination of Volatile Organic Compounds by Headspace / GC-MS
TM132	In - house Method	ELTRA CS800 Operators Guide
TM133	BS 1377: Part 3 1990;BS 6068-2.5	Determination of pH in Soil and Water using the GLpH pH Meter
TM153	Method 4500A,B,C, I, M AWWA/APHA, 20th Ed., 1999	Determination of Total Cyanide, Free (Easily Liberatable) Cyanide and Thiocyanate using the Skalar SANS+ System Segmented Flow Analyser
TM181	US EPA Method 6010B	Determination of Routine Metals in Soil by iCap 6500 Duo ICP-OES
TM218	Shaker extraction - EPA method 3546.	The determination of PAH in soil samples by GC-MS
TM414	Analysis of Petroleum Hydrocarbons in Environmental Media – Total Petroleum Hydrocarbon Criteria	Determination of Speciated Extractable Petroleum Hydrocarbons in Soils by GCxGC-FID

NA = not applicable.

Chemical testing (unless subcontracted) performed at ALS Life Sciences Ltd Hawarden (Method codes TM) or ALS Life Sciences Ltd Aberdeen (Method codes S).

Validated

CERTIFICATE OF ANALYSIS

SDG:	201211-37	**Client Reference:**	P18-669	**Report Number:**	583759
Location:	Llanwern	**Order Number:**	108281	**Superseded Report:**	581847

Test Completion Dates

Lab Sample No(s)	23409588	23409597	23409612	23409536	23409582	23409548	23409554	23409621	23409629	23409576
Customer Sample Ref.	M36-1	M36-2	M36-3	M37-1	M37-2	N34-1	N34-2	N36-1	N36-2	O33-1
AGS Ref.										
Depth	0.50 - 0.50	1.60 - 1.60	2.10 - 2.10	0.50 - 0.50	1.50 - 1.50	0.50 - 0.50	1.50 - 1.50	0.80 - 0.80	1.80 - 1.80	0.40 - 0.40
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
Ammonium Soil by Titration	18-Dec-2020	17-Dec-2020	18-Dec-2020	18-Dec-2020	18-Dec-2020	18-Dec-2020	17-Dec-2020	17-Dec-2020	18-Dec-2020	18-Dec-2020
Asbestos ID in Solid Samples	17-Dec-2020		18-Dec-2020	17-Dec-2020				17-Dec-2020		
Cyanide Comp/Free/Total/Thiocyanate	16-Dec-2020	16-Dec-2020	16-Dec-2020	16-Dec-2020	15-Dec-2020	16-Dec-2020	16-Dec-2020	16-Dec-2020	15-Dec-2020	16-Dec-2020
EPH CWG GC (S)	13-Jan-2021	13-Jan-2021	13-Jan-2021	13-Jan-2021	08-Jan-2021	14-Jan-2021	14-Jan-2021	15-Jan-2021	08-Jan-2021	08-Jan-2021
GRO by GC-FID (S)	11-Jan-2021	11-Jan-2021	11-Jan-2021	11-Jan-2021	11-Jan-2021	11-Jan-2021	11-Jan-2021	11-Jan-2021	11-Jan-2021	12-Jan-2021
Metals in solid samples by OES	18-Dec-2020	18-Dec-2020	18-Dec-2020	18-Dec-2020	18-Dec-2020	18-Dec-2020	17-Dec-2020	18-Dec-2020	18-Dec-2020	18-Dec-2020
PAH by GCMS	16-Dec-2020	16-Dec-2020	17-Dec-2020	18-Dec-2020	16-Dec-2020	16-Dec-2020	16-Dec-2020	16-Dec-2020	16-Dec-2020	16-Dec-2020
pH	15-Dec-2020	15-Dec-2020	15-Dec-2020	15-Dec-2020	15-Dec-2020	15-Dec-2020	15-Dec-2020	15-Dec-2020	15-Dec-2020	15-Dec-2020
Phenols by HPLC (S)	16-Dec-2020	16-Dec-2020	16-Dec-2020	16-Dec-2020	16-Dec-2020	16-Dec-2020	16-Dec-2020	17-Dec-2020	16-Dec-2020	16-Dec-2020
Sample description	12-Dec-2020	12-Dec-2020	12-Dec-2020	12-Dec-2020	12-Dec-2020	12-Dec-2020	12-Dec-2020	12-Dec-2020	12-Dec-2020	12-Dec-2020
Total Organic Carbon	18-Dec-2020	18-Dec-2020	18-Dec-2020	18-Dec-2020	17-Dec-2020	18-Dec-2020	18-Dec-2020	18-Dec-2020	17-Dec-2020	17-Dec-2020
TPH CWG GC (S)	13-Jan-2021	13-Jan-2021	13-Jan-2021	13-Jan-2021	11-Jan-2021	14-Jan-2021	14-Jan-2021	15-Jan-2021	11-Jan-2021	12-Jan-2021
VOC MS (S)	11-Jan-2021	11-Jan-2021	11-Jan-2021	11-Jan-2021	11-Jan-2021	11-Jan-2021	11-Jan-2021	11-Jan-2021	11-Jan-2021	11-Jan-2021

Lab Sample No(s)	23409561	23409568	23409642	23409650	23409542
Customer Sample Ref.	O34-1	O34-2	O35-1	O35-2	O35-3
AGS Ref.					
Depth	0.10 - 0.10	1.50 - 1.50	0.50 - 0.50	1.10 - 1.10	2.70 - 2.70
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
Ammonium Soil by Titration	18-Dec-2020	18-Dec-2020	18-Dec-2020	18-Dec-2020	18-Dec-2020
Asbestos ID in Solid Samples		17-Dec-2020	18-Dec-2020		18-Dec-2020
Cyanide Comp/Free/Total/Thiocyanate	16-Dec-2020	16-Dec-2020	16-Dec-2020	16-Dec-2020	16-Dec-2020
EPH CWG GC (S)	08-Jan-2021	08-Jan-2021	08-Jan-2021	14-Jan-2021	08-Jan-2021
GRO by GC-FID (S)	11-Jan-2021	11-Jan-2021	11-Jan-2021	11-Jan-2021	11-Jan-2021
Metals in solid samples by OES	18-Dec-2020	18-Dec-2020	17-Dec-2020	18-Dec-2020	17-Dec-2020
PAH by GCMS	17-Dec-2020	16-Dec-2020	16-Dec-2020	16-Dec-2020	16-Dec-2020
pH	15-Dec-2020	15-Dec-2020	15-Dec-2020	15-Dec-2020	15-Dec-2020
Phenols by HPLC (S)	17-Dec-2020	17-Dec-2020	16-Dec-2020	16-Dec-2020	16-Dec-2020
Sample description	12-Dec-2020	12-Dec-2020	12-Dec-2020	12-Dec-2020	12-Dec-2020
Total Organic Carbon	18-Dec-2020	18-Dec-2020	18-Dec-2020	18-Dec-2020	18-Dec-2020
TPH CWG GC (S)	11-Jan-2021	11-Jan-2021	11-Jan-2021	14-Jan-2021	11-Jan-2021
VOC MS (S)	11-Jan-2021	11-Jan-2021	11-Jan-2021	11-Jan-2021	11-Jan-2021

Appendix General

1. Results are expressed on a dry weight basis (dried at 35ºC) for all soil analyses except for the following: NRA and CEN Leach tests, flash point LOI, pH, ammonium as NH4 by the BRE method, VOC TICs and SVOC TICs.

2. If sufficient sample is received a sub sample will be retained free of charge for 30 days after analysis is completed (e-mailed) for all sample types unless the sample is destroyed on testing. The prepared soil sub sample that is analysed for asbestos will be retained for a period of 6 months after the analysis date. All bulk samples will be retained for a period of 6 months after the analysis date. All samples received and not scheduled will be disposed of one month after the date of receipt unless we are instructed to the contrary. Once the initial period has expired, a storage charge will be applied for each month or part thereof until the client cancels the request for sample storage. ALS reserve the right to charge for samples received and stored but not analysed.

3. With respect to turnaround, we will always endeavour to meet client requirements wherever possible, but turnaround times cannot be absolutely guaranteed due to so many variables beyond our control.

4. We take responsibility for any test performed by sub-contractors (marked with an asterisk). We endeavour to use UKAS/MCERTS Accredited Laboratories, who either complete a quality questionnaire or are audited by ourselves. For some determinands there are no UKAS/MCERTS Accredited Laboratories, in this instance a laboratory with a known track record will be utilised.

5. If no separate volatile sample is supplied by the client, or if a headspace or sediment is present in the volatile sample, the integrity of the data may be compromised. This will be flagged up as an invalid VOC on the test schedule and the result marked as deviating on the test certificate.

6. NDP - No determination possible due to insufficient/unsuitable sample.

7. Results relate only to the items tested.

8. LoDs (Limit of Detection) for wet tests reported on a dry weight basis are not corrected for moisture content.

9. **Surrogate recoveries** - Surrogates are added to your sample to monitor recovery of the test requested. A % recovery is reported, results are not corrected for the recovery measured. Typical recoveries for organics tests are 70-130%. Recoveries in soils are affected by organic rich or clay rich matrices. Waters can be affected by remediation fluids or high amounts of sediment. Test results are only ever reported if all of the associated quality checks pass; it is assumed that all recoveries outside of the values above are due to matrix affect.

10. Stones/debris are not routinely removed. We always endeavour to take a representative sub sample from the received sample.

11. In certain circumstances the method detection limit may be elevated due to the sample being outside the calibration range. Other factors that may contribute to this include possible interferences. In both cases the sample would be diluted which would cause the method detection limit to be raised.

12. Mercury results quoted on soils will not include volatile mercury as the analysis is performed on a dried and crushed sample.

13. For leachate preparations other than Zero Headspace Extraction (ZHE) volatile loss may occur.

14. For the BSEN 12457-3 two batch process to allow the cumulative release to be calculated, the volume of the leachate produced is measured and filtered for all tests. We therefore cannot carry out any unfiltered analysis. The tests affected include volatiles GCFID/GCMS and all subcontracted analysis.

15. Analysis and identification of specific compounds using GCFID is by retention time only, and we routinely calibrate and quantify for benzene, toluene, ethylbenzenes and xylenes (BTEX). For total volatiles in the C5-C12 range, the total area of the chromatogram is integrated and expressed as ug/kg or ug/l. Although this analysis is commonly used for the quantification of gasoline range organics (GRO), the system will also detect other compounds such as chlorinated solvents, and this may lead to a falsely high result with respect to hydrocarbons only. It is not possible to specifically identify these non-hydrocarbons, as standards are not routinely run for any other compounds, and for more definitive identification, volatiles by GCMS should be utilised.

16. We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample. Other coarse granular material such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

17. **Tentatively Identified Compounds (TICs)** are non-target peaks in VOC and SVOC analysis. All non-target peaks detected with a concentration above the LoD are subjected to a mass spectral library search. Non-target peaks with a library search confidence of >75% are reported based on the best mass spectral library match. When a non-target peak with a library search confidence of <75% is detected it is reported as "mixed hydrocarbons". Non-target compounds identified from the scan data are semi-quantified relative to one of the deuterated internal standards, under the same chromatographic conditions as the target compounds. This result is reported as a semi-quantitative value and reported as Tentatively Identified Compounds (TICs). TICs are outside the scope of UKAS accreditation and are not moisture corrected.

18. **Sample Deviations**

If a sample is classed as deviated then the associated results may be compromised.

1	**Container with Headspace provided for volatiles analysis**
2	**Incorrect container received**
3	**Deviation from method**
4	**Matrix interference**
♦	**Sample holding time exceeded in laboratory**
@	**Sample holding time exceeded due to late arrival of instructions or samples**
§	**Sampled on date not provided**

19. **Asbestos**

When requested, the individual sub sample scheduled will be analysed in house for the presence of asbestos fibres and asbestos containing material by our documented in house method TM048 based on HSG 248 (2005), which is accredited to ISO17025. If a specific asbestos fibre type is not found this will be reported as "Not detected". If no asbestos fibre types are found all will be reported as "Not detected" and the sub sample analysed deemed to be clear of asbestos. If an asbestos fibre type is found it will be reported as detected (for each fibre type found). Testing can be carried out on asbestos positive samples, but, due to Health and Safety considerations, may be replaced by alternative tests or reported as No Determination Possible (NDP). The quantity of asbestos present is not determined unless specifically requested.

Identification of Asbestos in Bulk Materials & Soils

The results for identification of asbestos in bulk materials are obtained from supplied bulk materials which have been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

The results for identification of asbestos in soils are obtained from a homogenised sub sample which has been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

Asbestos Type	Common Name
Chrysotile	White Asbestos
Amosite	Brown Asbestos
Crocidolite	Blue Asbestos
Fibrous Actinolite	-
Fibrous Anthophyllite	-
Fibrous Tremolite	-

Visual Estimation Of Fibre Content

Estimation of fibre content is not permitted as part of our UKAS accredited test other than: - Trace - Where only one or two asbestos fibres were identified.

Respirable Fibres

Respirable fibres are defined as fibres of <3 µm diameter, longer than 5 µm and with aspect ratios of at least 3:1 that can be inhaled into the lower regions of the lung and are generally acknowledged to be most important predictor of hazard and risk for cancers of the lung.
Standing Committee of Analysts, *The Quantification of Asbestos in Soil (2017).*

Further guidance on typical asbestos fibre content of manufactured products can be found in HSG 264.

The identification of asbestos containing materials and soils falls within our schedule of tests for which we hold UKAS accreditation, however opinions, interpretations and all other information contained in the report are outside the scope of UKAS accreditation.

Unit 7-8 Hawarden Business Park
Manor Road (off Manor Lane)
Hawarden
Deeside
CH5 3US
Tel: (01244) 528700
Fax: (01244) 528701
email: hawardencustomerservices@alsglobal.com
Website: www.alsenvironmental.co.uk

Rodgers Leask
Office 225
2430/2440
Aztec West
Almondsbury
Bristol
BS32 4QA

Attention: Elliot Thomas

CERTIFICATE OF ANALYSIS

Date of report Generation:	19 January 2021
Customer:	Rodgers Leask
Sample Delivery Group (SDG):	201212-45
Your Reference:	P18-669
Location:	Llanwern
Report No:	583536

This report has been revised and directly supersedes 582539 in its entirety.

We received 32 samples on Saturday December 12, 2020 and 32 of these samples were scheduled for analysis which was completed on Tuesday January 19, 2021. Accredited laboratory tests are defined within the report, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation.

Should this report require incorporation into client reports, it must be used in its entirety and not simply with the data sections alone.

Chemical testing (unless subcontracted) performed at ALS Life Sciences Ltd Hawarden (Method codes TM) or ALS Life Sciences Ltd Aberdeen (Method codes S).

All sample data is provided by the customer. The reported results relate to the sample supplied, and on the basis that this data is correct.
Incorrect sampling dates and/or sample information will affect the validity of results.
The customer is not permitted to reproduce this report except in full without the approval of the laboratory.

Approved By:

Sonia McWhan

Operations Manager

CERTIFICATE OF ANALYSIS

SDG:	201212-45	**Client Reference:**	P18-669	**Report Number:**	583536
Location:	Llanwern	**Order Number:**		**Superseded Report:**	582539

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
23419848	2BSE-1		0.00 - 0.00	10/12/2020
23419856	2BSE-2		0.00 - 0.00	10/12/2020
23419865	2BSE-3		0.00 - 0.00	10/12/2020
23419873	2BSE-4		0.00 - 0.00	10/12/2020
23419881	2BSE-5		0.00 - 0.00	10/12/2020
23419682	2BSE-6		0.00 - 0.00	11/12/2020
23419690	2BSE-7		0.00 - 0.00	11/12/2020
23419695	2BSE-8		0.00 - 0.00	11/12/2020
23419701	2BSE-9		0.00 - 0.00	11/12/2020
23419706	2BSE-10		0.00 - 0.00	11/12/2020
23419712	2BSE-11		0.00 - 0.00	11/12/2020
23419718	2BSE-12		0.00 - 0.00	11/12/2020
23419728	2BSE-13		0.00 - 0.00	11/12/2020
23419733	2BSE-14		0.00 - 0.00	11/12/2020
23419739	2BSE-22		0.00 - 0.00	11/12/2020
23419751	2BSE-23		0.00 - 0.00	11/12/2020
23419758	2BSE-24		0.00 - 0.00	11/12/2020
23419763	2BSE-25		0.00 - 0.00	11/12/2020
23419769	2BSE-26		0.00 - 0.00	11/12/2020
23419775	2BSE-27		0.00 - 0.00	11/12/2020
23419781	2BSE-28		0.00 - 0.00	11/12/2020
23419786	2BSE-29		0.00 - 0.00	11/12/2020
23419792	2BSE-30		0.00 - 0.00	11/12/2020
23419798	2BSE-31		0.00 - 0.00	11/12/2020
23419803	2BSE-32		0.00 - 0.00	11/12/2020
23419821	2BSE-33		0.00 - 0.00	11/12/2020
23419826	2BSE-34		0.00 - 0.00	11/12/2020
23419833	2BSE-35		0.00 - 0.00	11/12/2020
23419813	M33-1		0.50 - 0.50	10/12/2020
23419841	M33-2		1.40 - 1.40	10/12/2020
23419678	N33-1		0.30 - 0.30	10/12/2020
23419744	N33-2		1.60 - 1.60	10/12/2020

Only received samples which have had analysis scheduled will be shown on the following pages.

Validated

CERTIFICATE OF ANALYSIS

SDG:	201212-45	**Client Reference:**	P18-669	**Report Number:**	583536
Location:	Llanwern	**Order Number:**		**Superseded Report:**	582539

Results Legend

X Test

N No Determination Possible

Sample Types -

S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

Lab Sample No(s)			23419848		23419856		23419865		23419873		23419881		23419682		23419690		23419695			
Customer Sample Reference			2BSE-1		2BSE-2		2BSE-3		2BSE-4		2BSE-5		2BSE-6		2BSE-7		2BSE-8			
AGS Reference																				
Depth (m)			0.00 - 0.00		0.00 - 0.00		0.00 - 0.00		0.00 - 0.00		0.00 - 0.00		0.00 - 0.00		0.00 - 0.00		0.00 - 0.00			
Container			1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)
Sample Type			S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
Ammonium Soil by Titration	All	NDPs: 0 Tests: 32	X			X			X		X			X		X			X		X
Asbestos ID in Solid Samples	All	NDPs: 0 Tests: 16	X					X					X					X			
Asbestos Quantification - Full	All	NDPs: 0 Tests: 2											X								
Calorific Value (S)*	All	NDPs: 0 Tests: 13		X		X			X		X			X		X			X		X
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 32	X			X			X		X			X		X			X		X
EPH CWG GC (S)	All	NDPs: 0 Tests: 32		X		X			X		X			X		X			X		X
GRO by GC-FID (S)	All	NDPs: 0 Tests: 32			X		X			X		X			X		X			X	
Metals in solid samples by OES	All	NDPs: 0 Tests: 32		X		X			X		X			X		X			X		X
PAH by GCMS	All	NDPs: 0 Tests: 32	X			X			X		X			X		X			X		X
pH	All	NDPs: 0 Tests: 32	X			X			X		X			X		X			X		X
Phenols by HPLC (S)	All	NDPs: 0 Tests: 32	X			X			X		X			X		X			X		X
Sample description	All	NDPs: 0 Tests: 32		X		X			X		X			X		X			X		X
Total Organic Carbon	All	NDPs: 0 Tests: 32		X		X			X		X			X		X			X		X
TPH CWG GC (S)	All	NDPs: 0 Tests: 32		X		X			X		X			X		X			X		X
VOC MS (S)	All	NDPs: 0 Tests: 32			X		X			X		X			X		X			X	

23419751	2BSE-23		0.00 - 0.00	250g Amber Jar (ALE210)	S		x					x	x		x	x	x	x	x	x	x	x		
23419739	2BSE-22		0.00 - 0.00	60g VOC (ALE215)	S									x										x	
				250g Amber Jar (ALE210)	S		x					x	x		x	x	x	x	x	x	x	x		
				1kg TUB with Handle (ALE260)	S			x																	
23419733	2BSE-14		0.00 - 0.00	60g VOC (ALE215)	S									x										x	
				250g Amber Jar (ALE210)	S		x					x	x		x	x	x	x	x	x	x	x		
23419728	2BSE-13		0.00 - 0.00	60g VOC (ALE215)	S									x										x	
				250g Amber Jar (ALE210)	S		x				x	x			x	x	x	x	x	x	x			
				1kg TUB with Handle (ALE260)	S			x					x										x		
23419718	2BSE-12		0.00 - 0.00	60g VOC (ALE215)	S									x										x	
				250g Amber Jar (ALE210)	S		x				x	x			x	x	x	x	x	x	x			
				1kg TUB with Handle (ALE260)	S							x										x		
23419712	2BSE-11		0.00 - 0.00	60g VOC (ALE215)	S									x										x	
				250g Amber Jar (ALE210)	S		x				x	x	x		x	x	x	x	x	x	x	x		
				1kg TUB with Handle (ALE260)	S			x																	
23419706	2BSE-10		0.00 - 0.00	60g VOC (ALE215)	S									x										x	
				250g Amber Jar (ALE210)	S		x				x	x	x		x	x	x	x	x	x	x	x		
23419701	2BSE-9		0.00 - 0.00	60g VOC (ALE215)	S									x										x	
				250g Amber Jar (ALE210)	S		x				x	x	x		x	x	x	x	x	x	x	x		
				1kg TUB with Handle (ALE260)	S			x																	
23419695	2BSE-8		0.00 - 0.00	60g VOC (ALE215)	S									x										x	

CERTIFICATE OF ANALYSIS

SDG: 201212-45 **Client Reference:** P18-669 **Report Number:** 583536
Location: Llanwern **Order Number:** **Superseded Report:** 582539

Results Legend

X Test

N No Determination Possible

Sample Types -
S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

			Lab Sample No(s)																	
			23419751	23419758		23419763		23419769		23419775		23419781		23419786		23419792				
			Customer Sample Reference																	
			2BSE-23	2BSE-24		2BSE-25		2BSE-26		2BSE-27		2BSE-28		2BSE-29		2BSE-30				
			AGS Reference																	
			Depth (m)																	
			0.00 - 0.00	0.00 - 0.00		0.00 - 0.00		0.00 - 0.00		0.00 - 0.00		0.00 - 0.00		0.00 - 0.00		0.00 - 0.00				
			Container																	
			60g VOC (ALE215)	1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)	60g VOC (ALE215)
			Sample Type																	
			S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
Ammonium Soil by Titration	All	NDPs: 0 Tests: 32			X		X			X		X		X		X				X	
Asbestos ID in Solid Samples	All	NDPs: 0 Tests: 16		X					X					X					X		
Asbestos Quantification - Full	All	NDPs: 0 Tests: 2																			
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 32			X		X			X		X		X		X				X	
EPH CWG GC (S)	All	NDPs: 0 Tests: 32			X		X			X		X		X		X				X	
GRO by GC-FID (S)	All	NDPs: 0 Tests: 32	X			X		X			X		X		X		X				X
Metals in solid samples by OES	All	NDPs: 0 Tests: 32			X		X			X		X		X		X				X	
PAH by GCMS	All	NDPs: 0 Tests: 32			X		X			X		X		X		X				X	
pH	All	NDPs: 0 Tests: 32			X		X			X		X		X		X				X	
Phenols by HPLC (S)	All	NDPs: 0 Tests: 32			X		X			X		X		X		X				X	
Sample description	All	NDPs: 0 Tests: 32			X		X			X		X		X		X				X	
Total Organic Carbon	All	NDPs: 0 Tests: 32			X		X			X		X		X		X				X	
TPH CWG GC (S)	All	NDPs: 0 Tests: 32			X		X			X		X		X		X				X	
VOC MS (S)	All	NDPs: 0 Tests: 32	X			X		X			X		X		X		X				X

23419744	N33-2		1.60 - 1.60	250g Amber Jar (ALE210)	S	X			X	X		X	X	X	X	X	X	X	
23419678	N33-1		0.30 - 0.30	60g VOC (ALE215)	S						X								X
				250g Amber Jar (ALE210)	S	X			X	X		X	X	X	X	X	X	X	
				1kg TUB with Handle (ALE260)	S		X	X											
23419841	M33-2		1.40 - 1.40	60g VOC (ALE215)	S						X								X
				250g Amber Jar (ALE210)	S	X			X	X		X	X	X	X	X	X	X	
23419813	M33-1		0.50 - 0.50	60g VOC (ALE215)	S						X								X
				250g Amber Jar (ALE210)	S	X			X	X		X	X	X	X	X	X	X	
				1kg TUB with Handle (ALE260)	S		X												
23419833	2BSE-35		0.00 - 0.00	60g VOC (ALE215)	S						X								X
				250g Amber Jar (ALE210)	S	X			X	X		X	X	X	X	X	X	X	
23419826	2BSE-34		0.00 - 0.00	60g VOC (ALE215)	S						X								X
				250g Amber Jar (ALE210)	S	X			X	X		X	X	X	X	X	X	X	
				1kg TUB with Handle (ALE260)	S		X												
23419821	2BSE-33		0.00 - 0.00	60g VOC (ALE215)	S						X								X
				250g Amber Jar (ALE210)	S	X			X	X		X	X	X	X	X	X	X	
23419803	2BSE-32		0.00 - 0.00	60g VOC (ALE215)	S						X								X
				250g Amber Jar (ALE210)	S	X			X	X		X	X	X	X	X	X	X	
				1kg TUB with Handle (ALE260)	S		X												
23419798	2BSE-31		0.00 - 0.00	60g VOC (ALE215)	S						X								X
				250g Amber Jar (ALE210)	S	X			X	X		X	X	X	X	X	X	X	

CERTIFICATE OF ANALYSIS

SDG:	201212-45	**Client Reference:**	P18-669	**Report Number:**	583536
Location:	Llanwern	**Order Number:**		**Superseded Report:**	582539

Results Legend

X **Test**

N **No Determination Possible**

Sample Types -

S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
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DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

			Lab Sample No(s)	Customer Sample Reference	AGS Reference	Depth (m)	Container	Sample Type
			23419744	N33-2		1.60 - 1.60	60g VOC (ALE215)	S
GRO by GC-FID (S)	All	NDPs: 0 Tests: 32					X	
VOC MS (S)	All	NDPs: 0 Tests: 32					X	

Sample Descriptions

Grain Sizes

very fine	<0.063mm	**fine**	0.063mm - 0.1mm	**medium**	0.1mm - 2mm	**coarse**	2mm - 10mm	**very coarse**	>10mm

Lab Sample No(s)	Customer Sample Ref.	Depth (m)	Colour	Description	Inclusions	Inclusions 2
23419848	2BSE-1	0.00 - 0.00	Dark Brown	Loamy Sand	Stones	None
23419856	2BSE-2	0.00 - 0.00	Dark Brown	Sandy Loam	Stones	Vegetation
23419865	2BSE-3	0.00 - 0.00	Dark Brown	Loamy Sand	Stones	None
23419873	2BSE-4	0.00 - 0.00	Dark Brown	Stone/Soil	None	Stones
23419881	2BSE-5	0.00 - 0.00	Dark Brown	Loamy Sand	Stones	None
23419682	2BSE-6	0.00 - 0.00	Black	Loamy Sand	Stones	None
23419690	2BSE-7	0.00 - 0.00	Dark Brown	Loamy Sand	Vegetation	Stones
23419695	2BSE-8	0.00 - 0.00	Dark Brown	Sandy Clay Loam	Stones	Vegetation
23419701	2BSE-9	0.00 - 0.00	Black	Loamy Sand	Stones	None
23419706	2BSE-10	0.00 - 0.00	Black	Sandy Loam	Stones	None
23419712	2BSE-11	0.00 - 0.00	Dark Brown	Sandy Clay Loam	Stones	Vegetation
23419718	2BSE-12	0.00 - 0.00	Dark Brown	Sandy Clay Loam	Stones	Vegetation
23419728	2BSE-13	0.00 - 0.00	Dark Brown	Sandy Clay Loam	Stones	Vegetation
23419733	2BSE-14	0.00 - 0.00	Black	Loamy Sand	Stones	Crushed Brick
23419739	2BSE-22	0.00 - 0.00	Dark Brown	Loamy Sand	Stones	None
23419751	2BSE-23	0.00 - 0.00	Dark Brown	Sandy Loam	Stones	Vegetation
23419758	2BSE-24	0.00 - 0.00	Dark Brown	Sandy Loam	Stones	Vegetation
23419763	2BSE-25	0.00 - 0.00	Dark Brown	Loamy Sand	Stones	None
23419769	2BSE-26	0.00 - 0.00	Dark Brown	Loamy Sand	Stones	None
23419775	2BSE-27	0.00 - 0.00	Dark Brown	Loamy Sand	Stones	Vegetation
23419781	2BSE-28	0.00 - 0.00	Dark Brown	Sandy Loam	Stones	None
23419786	2BSE-29	0.00 - 0.00	Dark Brown	Sandy Loam	Stones	Vegetation
23419792	2BSE-30	0.00 - 0.00	Dark Brown	Sandy Loam	Stones	Vegetation
23419798	2BSE-31	0.00 - 0.00	Dark Brown	Sandy Loam	Stones	None
23419803	2BSE-32	0.00 - 0.00	Dark Brown	Loamy Sand	Stones	None
23419821	2BSE-33	0.00 - 0.00	Dark Brown	Sandy Loam	Stones	None
23419826	2BSE-34	0.00 - 0.00	Black	Loamy Sand	Stones	Crushed Brick
23419833	2BSE-35	0.00 - 0.00	Black	Loamy Sand	Stones	None
23419813	M33-1	0.50 - 0.50	Dark Brown	Sand	Stones	None
23419841	M33-2	1.40 - 1.40	Dark Brown	Sand	Stones	Brick
23419678	N33-1	0.30 - 0.30	Dark Brown	Loamy Sand	Stones	Vegetation
23419744	N33-2	1.60 - 1.60	Dark Brown	Sand	Stones	None

These descriptions are only intended to act as a cross check if sample identities are questioned, and to provide a log of sample matrices with respect to MCERTS validation. They are not intended as full geological descriptions.

We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally ocurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample.

Other coarse granular materials such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

Validated

CERTIFICATE OF ANALYSIS

SDG:	201212-45	**Client Reference:**	P18-669	**Report Number:**	583536
Location:	Llanwern	**Order Number:**		**Superseded Report:**	582539

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	2BSE-1	2BSE-2	2BSE-3	2BSE-4	2BSE-5	2BSE-6
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	10/12/2020	10/12/2020	10/12/2020	10/12/2020	10/12/2020	11/12/2020
			Sample Time	.	.	.	.	.	.
			Date Received	12/12/2020	12/12/2020	12/12/2020	12/12/2020	12/12/2020	12/12/2020
			SDG Ref	201212-45	201212-45	201212-45	201212-45	201212-45	201212-45
			Lab Sample No.(s)	23419848	23419856	23419865	23419873	23419881	23419682
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		7.9	13	12	10	10	11
Gross Calorific Value in Dry Matter Q(V/gr/d)	<0.5 MJ/kg	SUB		5.04	5.93	4.17	3.13	1.06	9.48
Gross Calorific Value Original Q(V/gr/ar)	<0.5 MJ/kg	SUB		4.41	5.32	3.56	2.78	0.95	8.27
Net Calorific Value in Dry Matter Q(V/net/d)	<0.5 MJ/kg	SUB		4.68	5.62	3.81	2.88	0.78	9.1
Net Calorific Value in Original Q(V/net/ar)	<0.5 MJ/kg	SUB		3.8	4.81	2.91	2.3	<0.5	7.64
Water Analytical M (ad)	<0.5 %	SUB		1.58	0.95	0.92	1.18	1.38	1.38
Water Gross M(ex)	<0.5 %	SUB		11.1	9.39	13.9	10.1	8.35	11.5
Water Total M(ar)	<0.5 %	SUB		12.5	10.2	14.7	11.1	9.61	12.8
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	<12 M	<12 M	<12 #	<12 M	<12 M
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.02 M	<0.01 M	<0.01 #	0.0111 M	<0.01 M
Cresols	<0.01 mg/kg	TM062 (S)		0.0109 M	<0.02 M	<0.01 M	<0.01 #	<0.01 M	0.0112 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.03 M	<0.015 M	<0.015 #	<0.015 M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.07 M	<0.035 M	<0.035 #	<0.035 M	<0.035 M
Soil Organic Matter (SOM)	<0.35 %	TM132		13.6 #	18.1 #	22.8 #	16.8 #	23.3 #	30 #
pH	1 pH Units	TM133		11.9 M	10.9 M	11.3 M	11.4 #	11.6 M	11.7 M
Cyanide, Total	<1 mg/kg	TM153		2.44 M	<1 M	<1 M	<1 #	2.96 M	<1 M
Arsenic	<0.6 mg/kg	TM181		7.61 M	6.63 M	5.83 M	6.09 #	7.19 M	1.2 M
Cadmium	<0.02 mg/kg	TM181		1.42 M	0.534 M	0.495 M	0.341 #	1.07 M	<0.02 M
Chromium	<0.9 mg/kg	TM181		416 M	174 M	187 M	358 #	227 M	133 M
Copper	<1.4 mg/kg	TM181		25.7 M	19.6 M	14.6 M	20.1 #	<14 M	5.49 M
Iron	<1000 mg/kg	TM181		170000 #	116000 #	101000 #	130000 #	168000 #	102000 #
Lead	<0.7 mg/kg	TM181		179 M	83.8 M	65.1 M	54.2 #	273 M	<0.7 M
Manganese	<0.13 mg/kg	TM181		27700 M	16100 M	15400 M	23800 #	19100 M	20100 M
Mercury	<0.14 mg/kg	TM181		<1.4 M	<0.14 M	<0.14 M	<0.14 #	<1.4 M	0.512 M
Nickel	<0.2 mg/kg	TM181		21.6 M	12 M	10 M	9.43 #	18.1 M	<0.2 M
Selenium	<1 mg/kg	TM181		11.4 #	3.21 #	3.83 #	5.94 #	<10 #	<1 #
Vanadium	<0.2 mg/kg	TM181		872 #	330 #	281 #	699 #	701 #	144 #
Zinc	<1.9 mg/kg	TM181		491 M	352 M	235 M	199 #	631 M	<1.9 M
Asbestos Quantification - Gravimetric - %	<0.001 %	TM304						<0.001 #	
Asbestos Quantification - PCOM Evaluation - %	<0.001 %	TM304						<0.001 #	
Additional Asbestos Components (Using TM048)		TM304						None #	
Analysts Comments		TM304						N/A	
Asbestos Quantification - Total - %	<0.001 %	TM304						<0.001 #	

Validated

CERTIFICATE OF ANALYSIS

SDG:	201212-45	**Client Reference:**	P18-669	**Report Number:**	583536
Location:	Llanwern	**Order Number:**		**Superseded Report:**	582539

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	2BSE-7	2BSE-8	2BSE-9	2BSE-10	2BSE-11	2BSE-12
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	11/12/2020	11/12/2020	11/12/2020	11/12/2020	11/12/2020	11/12/2020
			Sample Time	.	.	.	.	.	.
			Date Received	12/12/2020	12/12/2020	12/12/2020	12/12/2020	12/12/2020	12/12/2020
			SDG Ref	201212-45	201212-45	201212-45	201212-45	201212-45	201212-45
			Lab Sample No.(s)	23419690	23419695	23419701	23419706	23419712	23419718
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		12	7.3	13	11	10	5.7
Gross Calorific Value in Dry Matter Q(V/gr/d)	<0.5 MJ/kg	SUB		7.59	7.12	8.46	8.62	8.43	7.47
Gross Calorific Value Original Q(V/gr/ar)	<0.5 MJ/kg	SUB		6.6	6.19	7.31	7.43	7.21	6.62
Net Calorific Value in Dry Matter Q(V/net/d)	<0.5 MJ/kg	SUB		7.22	6.71	8.07	8.24	8.02	7.11
Net Calorific Value in Original Q(V/net/ar)	<0.5 MJ/kg	SUB		5.98	5.61	6.66	6.79	6.53	6.04
Water Analytical M (ad)	<0.5 %	SUB		0.94	0.98	1.12	1.07	1.26	1.11
Water Gross M(ex)	<0.5 %	SUB		12.2	12.3	12.6	12.8	13.4	10.4
Water Total M(ar)	<0.5 %	SUB		13	13.1	13.6	13.8	14.4	11.4
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	<12 M	<12 M	<12 M	<12 M	<12
Phenol	<0.01 mg/kg	TM062 (S)		0.0114 M	0.0108 M	0.0115 M	0.0113 M	0.0111 M	<0.01
Cresols	<0.01 mg/kg	TM062 (S)		0.0114 M	0.0108 M	<0.01 M	0.0113 M	<0.01 M	<0.01
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M	<0.015 M	<0.015 M	0.0222 M	<0.015
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035
Soil Organic Matter (SOM)	<0.35 %	TM132		32.9 #	19.5 #	60.7 #	28.6 #	45 #	31.2
pH	1 pH Units	TM133		11.6 M	11.2 M	11.6 M	11.4 M	11.3 M	11.6
Cyanide, Total	<1 mg/kg	TM153		1.03 M	<1 M	<1 M	<1 M	<1 M	<1
Arsenic	<0.6 mg/kg	TM181		4.84 M	56.8 M	1.06 M	13.6 M	6.63 M	10.1
Cadmium	<0.02 mg/kg	TM181		0.725 M	0.217 M	<0.02 M	0.977 M	0.825 M	0.45
Chromium	<0.9 mg/kg	TM181		200 M	227 M	3.97 M	195 M	282 M	253
Copper	<1.4 mg/kg	TM181		13.1 M	75.6 M	<1.4 M	19.2 M	21.5 M	23.9
Iron	<1000 mg/kg	TM181		78100 #	106000 #	94500 #	78500 #	90100 #	92900
Lead	<0.7 mg/kg	TM181		83 M	156 M	<0.7 M	157 M	112 M	82.8
Manganese	<0.13 mg/kg	TM181		15700 M	16500 M	18600 M	13400 M	15900 M	15400
Mercury	<0.14 mg/kg	TM181		<0.14 M	<0.14 M	0.499 M	<1.4 M	<0.14 M	<0.14
Nickel	<0.2 mg/kg	TM181		8.15 M	16.9 M	<0.2 M	25.2 M	12.3 M	15.9
Selenium	<1 mg/kg	TM181		3.43 #	1.3 #	<1 #	<10 #	3.94 #	3.74
Vanadium	<0.2 mg/kg	TM181		494 #	301 #	9.96 #	304 #	329 #	373
Zinc	<1.9 mg/kg	TM181		293 M	471 M	<1.9 M	433 M	357 M	316

Validated

CERTIFICATE OF ANALYSIS

SDG:	201212-45	**Client Reference:**	P18-669	**Report Number:**	583536
Location:	Llanwern	**Order Number:**		**Superseded Report:**	582539

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	2BSE-13	2BSE-14	2BSE-22	2BSE-23	2BSE-24	2BSE-25
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	11/12/2020	11/12/2020	11/12/2020	11/12/2020	11/12/2020	11/12/2020
			Sample Time	.	.	.	.	.	.
			Date Received	12/12/2020	12/12/2020	12/12/2020	12/12/2020	12/12/2020	12/12/2020
			SDG Ref	201212-45	201212-45	201212-45	201212-45	201212-45	201212-45
			Lab Sample No.(s)	23419728	23419733	23419739	23419751	23419758	23419763
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		7.8	16	15	15	17	14
Gross Calorific Value in Dry Matter Q(V/gr/d)	<0.5 MJ/kg	SUB		6.93					
Gross Calorific Value Original Q(V/gr/ar)	<0.5 MJ/kg	SUB		5.99					
Net Calorific Value in Dry Matter Q(V/net/d)	<0.5 MJ/kg	SUB		6.58					
Net Calorific Value in Original Q(V/net/ar)	<0.5 MJ/kg	SUB		5.37					
Water Analytical M (ad)	<0.5 %	SUB		1					
Water Gross M(ex)	<0.5 %	SUB		12.7					
Water Total M(ar)	<0.5 %	SUB		13.6					
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	<12 M	<12 M	<12 M	<12 M	<12 M
Phenol	<0.01 mg/kg	TM062 (S)		0.0109 M	0.0119 M	<0.01 M	0.0118 M	0.0121 M	<0.01 M
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	0.0117 M	<0.01 M	<0.01 M	<0.01 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M
Soil Organic Matter (SOM)	<0.35 %	TM132		34.3 #	27.8 #	21 #	20.3 #	33.4 #	20.5 #
pH	1 pH Units	TM133		11.6 M	11.5 M	11.8 M	10.7 M	10.6 M	11.3 M
Cyanide, Total	<1 mg/kg	TM153		<1 M	<1 M	2.13 M	<1 M	<1 M	1.38 M
Arsenic	<0.6 mg/kg	TM181		5.12 M	10.3 M	6.88 M	8.11 M	8.88 M	7.36 M
Cadmium	<0.02 mg/kg	TM181		0.557 M	1.38 M	1.21 M	2.07 M	0.647 M	0.793 M
Chromium	<0.9 mg/kg	TM181		144 M	118 M	318 M	129 M	209 M	217 M
Copper	<1.4 mg/kg	TM181		15.1 M	24 M	16.2 M	20.3 M	23.4 M	20.2 M
Iron	<1000 mg/kg	TM181		82200 #	72200 #	173000 #	94500 #	93600 #	138000 #
Lead	<0.7 mg/kg	TM181		61 M	185 M	246 M	114 M	105 M	190 M
Manganese	<0.13 mg/kg	TM181		11100 M	8640 M	23700 M	9910 M	11500 M	18900 M
Mercury	<0.14 mg/kg	TM181		<0.14 M	<0.14 M	<1.4 M	<0.14 M	<1.4 M	<0.14 M
Nickel	<0.2 mg/kg	TM181		9.87 M	19 M	24.1 M	16.3 M	25.7 M	13.3 M
Selenium	<1 mg/kg	TM181		2.52 #	<1 #	11.8 #	1.87 #	<10 #	3.1 #
Vanadium	<0.2 mg/kg	TM181		258 #	154 #	587 #	178 #	228 #	578 #
Zinc	<1.9 mg/kg	TM181		300 M	536 M	580 M	370 M	302 M	566 M

Validated

CERTIFICATE OF ANALYSIS

SDG:	201212-45	**Client Reference:**	P18-669	**Report Number:**	583536
Location:	Llanwern	**Order Number:**		**Superseded Report:**	582539

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	2BSE-26	2BSE-27	2BSE-28	2BSE-29	2BSE-30	2BSE-31
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	11/12/2020	11/12/2020	11/12/2020	11/12/2020	11/12/2020	11/12/2020
			Sample Time	.	.	.	.	.	.
			Date Received	12/12/2020	12/12/2020	12/12/2020	12/12/2020	12/12/2020	12/12/2020
			SDG Ref	201212-45	201212-45	201212-45	201212-45	201212-45	201212-45
			Lab Sample No.(s)	23419769	23419775	23419781	23419786	23419792	23419798
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		12	16	15	17	15	14
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	<12 M	<12 M	<12 M	<12 M	<12 M
Phenol	<0.01 mg/kg	TM062 (S)		0.0114 M	<0.01 M	<0.01 M	<0.01 M	0.0236 M	0.0117 M
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 M	0.0119 M	<0.01 M	<0.01 M	0.0118 M	<0.01 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M
Soil Organic Matter (SOM)	<0.35 %	TM132		7.55 #	26.5 #	32.1 #	35 #	34.8 #	26.2 #
pH	1 pH Units	TM133		11.4 M	11.5 M	11.3 M	11.5 M	10.6 M	10.9 M
Cyanide, Total	<1 mg/kg	TM153		<1 M	<1 M	1.18 M	<1 M	<1 M	<1 M
Arsenic	<0.6 mg/kg	TM181		<6 M	1.52 M	9.27 M	1.33 M	7.87 M	8.96 M
Cadmium	<0.02 mg/kg	TM181		0.253 M	<0.02 M	1.18 M	<0.02 M	1.16 M	0.894 M
Chromium	<0.9 mg/kg	TM181		348 M	129 M	216 M	<0.9 M	208 M	209 M
Copper	<1.4 mg/kg	TM181		15.5 M	8.73 M	20.6 M	<1.4 M	22.4 M	18.1 M
Iron	<1000 mg/kg	TM181		113000 #	115000 #	96000 #	111000 #	99500 #	90100 #
Lead	<0.7 mg/kg	TM181		58.3 M	<0.7 M	186 M	<0.7 M	181 M	132 M
Manganese	<0.13 mg/kg	TM181		23500 M	19200 M	14000 M	15500 M	13300 M	13700 M
Mercury	<0.14 mg/kg	TM181		<1.4 M	0.504 M	<1.4 M	0.624 M	<1.4 M	<1.4 M
Nickel	<0.2 mg/kg	TM181		14.6 M	<0.2 M	21.1 M	<0.2 M	22.1 M	18.9 M
Selenium	<1 mg/kg	TM181		13.7 #	<1 #	<10 #	<1 #	<10 #	<10 #
Vanadium	<0.2 mg/kg	TM181		698 #	146 #	305 #	3.89 #	272 #	329 #
Zinc	<1.9 mg/kg	TM181		171 M	<1.9 M	539 M	<1.9 M	512 M	372 M

Validated

CERTIFICATE OF ANALYSIS

SDG:	201212-45	**Client Reference:**	P18-669	**Report Number:**	583536
Location:	Llanwern	**Order Number:**		**Superseded Report:**	582539

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	2BSE-32	2BSE-33	2BSE-34	2BSE-35	M33-1	M33-2
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.50 - 0.50	1.40 - 1.40
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	11/12/2020	11/12/2020	11/12/2020	11/12/2020	10/12/2020	10/12/2020
			Sample Time	.	.	.	.	.	.
			Date Received	12/12/2020	12/12/2020	12/12/2020	12/12/2020	12/12/2020	12/12/2020
			SDG Ref	201212-45	201212-45	201212-45	201212-45	201212-45	201212-45
			Lab Sample No.(s)	23419803	23419821	23419826	23419833	23419813	23419841
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		13	16	12	14	3.6	5.3
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	<12 M	<12 M	<12 M	<12 M	<12 M
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 M	0.0119 M	0.0113 M	0.0232 M	<0.01 M	<0.01 M
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	0.0116 M	<0.01 M	<0.01 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M
Soil Organic Matter (SOM)	<0.35 %	TM132		25.2 #	39.7 #	24.3 #	22.4 #	<0.35 #	0.359 #
pH	1 pH Units	TM133		11.6 M	11.5 M	11.6 M	11.4 M	9.26 M	12.8 M
Cyanide, Total	<1 mg/kg	TM153		1.28 M	<1 M	<1 M	<1 M	<1 M	<1 M
Arsenic	<0.6 mg/kg	TM181		6.41 M	1.39 M	9.12 M	1.63 M	2.71 M	2.96 M
Cadmium	<0.02 mg/kg	TM181		0.626 M	<0.02 M	<0.2 M	<0.02 M	0.245 M	0.606 M
Chromium	<0.9 mg/kg	TM181		376 M	53.2 M	230 M	109 M	4.13 M	958 M
Copper	<1.4 mg/kg	TM181		18.8 M	4.52 M	51.1 M	11.3 M	8.69 M	23.7 M
Iron	<1000 mg/kg	TM181		122000 #	110000 #	136000 #	129000 #	7440 #	144000 #
Lead	<0.7 mg/kg	TM181		99.4 M	<0.7 M	75.2 M	<0.7 M	12.1 M	6.65 M
Manganese	<0.13 mg/kg	TM181		25100 M	13500 M	18700 M	13600 M	171 M	40200 M
Mercury	<0.14 mg/kg	TM181		<1.4 M	0.536 M	<1.4 M	0.661 M	<0.14 M	<0.14 M
Nickel	<0.2 mg/kg	TM181		21 M	<0.2 M	41.8 M	<0.2 M	2.17 M	2.61 M
Selenium	<1 mg/kg	TM181		13.8 #	<1 #	<10 #	<1 #	<1 #	7.37 #
Vanadium	<0.2 mg/kg	TM181		597 #	87.9 #	413 #	150 #	4.53 #	685 #
Zinc	<1.9 mg/kg	TM181		282 M	<1.9 M	231 M	<1.9 M	13.2 M	66.7 M

CERTIFICATE OF ANALYSIS

SDG:	201212-45	**Client Reference:**	P18-669	**Report Number:**	583536
Location:	Llanwern	**Order Number:**		**Superseded Report:**	582539

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	N33-1	N33-2
			Depth (m)	0.30 - 0.30	1.60 - 1.60
			Sample Type	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	10/12/2020	10/12/2020
			Sample Time	.	.
			Date Received	12/12/2020	12/12/2020
			SDG Ref	201212-45	201212-45
			Lab Sample No.(s)	23419678	23419744
			AGS Reference		
Moisture Content Ratio (% of as received sample)	%	PM024		9.9	9.8
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	<12 M
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M
Cresols	<0.01 mg/kg	TM062 (S)		0.0222 M	<0.01 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 M
Soil Organic Matter (SOM)	<0.35 %	TM132		3.09 #	<0.35 #
pH	1 pH Units	TM133		11.4 M	8.54 M
Cyanide, Total	<1 mg/kg	TM153		<1 M	<1 M
Arsenic	<0.6 mg/kg	TM181		9.86 M	44.9 M
Cadmium	<0.02 mg/kg	TM181		0.618 M	<0.2 M
Chromium	<0.9 mg/kg	TM181		201 M	<9 M
Copper	<1.4 mg/kg	TM181		20.2 M	<14 M
Iron	<1000 mg/kg	TM181		133000 #	443000 #
Lead	<0.7 mg/kg	TM181		42 M	16.5 M
Manganese	<0.13 mg/kg	TM181		18200 M	16400 M
Mercury	<0.14 mg/kg	TM181		<0.14 M	1.56 M
Nickel	<0.2 mg/kg	TM181		14.2 M	18.5 M
Selenium	<1 mg/kg	TM181		3.76 #	<10 #
Vanadium	<0.2 mg/kg	TM181		252 #	31.9 #
Zinc	<1.9 mg/kg	TM181		164 M	48 M
Asbestos Quantification - Gravimetric - %	<0.001 %	TM304		<0.001 #	
Asbestos Quantification - PCOM Evaluation - %	<0.001 %	TM304		<0.001 #	
Additional Asbestos Components (Using TM048)		TM304		None #	
Analysts Comments		TM304		N/A	
Asbestos Quantification - Total - %	<0.001 %	TM304		<0.001 #	

Validated

CERTIFICATE OF ANALYSIS

SDG: 201212-45 **Client Reference:** P18-669 **Report Number:** 583536
Location: Llanwern **Order Number:** **Superseded Report:** 582539

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	2BSE-1	2BSE-2	2BSE-3	2BSE-4	2BSE-5	2BSE-6
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	10/12/2020	10/12/2020	10/12/2020	10/12/2020	10/12/2020	11/12/2020
			Sample Time	.	.	.	.	.	.
			Date Received	12/12/2020	12/12/2020	12/12/2020	12/12/2020	12/12/2020	12/12/2020
			SDG Ref	201212-45	201212-45	201212-45	201212-45	201212-45	201212-45
			Lab Sample No.(s)	23419848	23419856	23419865	23419873	23419881	23419682
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		78.1	80.9	79.4	81	77.8	81.3
Acenaphthene-d10 % recovery**	%	TM218		85.5	86.4	83.6	79.4	88	83
Phenanthrene-d10 % recovery**	%	TM218		87	91.3	90.5	80.5	86.5	84.4
Chrysene-d12 % recovery**	%	TM218		84.3	86.8	84.9	80.8	84.7	85
Perylene-d12 % recovery**	%	TM218		72.2	72.9	71.6	79.5	72	82.8
Naphthalene	<9 µg/kg	TM218		3510 M	1090 M	1250 M	1070 #	6030 M	1840 M
Acenaphthylene	<12 µg/kg	TM218		1730 M	445 M	498 M	337 #	2700 M	550 M
Acenaphthene	<8 µg/kg	TM218		128 M	95.2 M	72.2 M	86.3 #	264 M	92.5 M
Fluorene	<10 µg/kg	TM218		692 M	196 M	291 M	231 #	1570 M	305 M
Phenanthrene	<15 µg/kg	TM218		10700 M	2170 M	3230 M	2730 #	11400 M	3590 M
Anthracene	<16 µg/kg	TM218		4050 M	633 M	1030 M	744 #	4340 M	819 M
Fluoranthene	<17 µg/kg	TM218		23000 M	3510 M	6010 M	4920 #	19000 M	6440 M
Pyrene	<15 µg/kg	TM218		15900 M	2730 M	4590 M	4580 #	14800 M	4630 M
Benz(a)anthracene	<14 µg/kg	TM218		8400 M	1560 M	2440 M	2530 #	8900 M	2920 M
Chrysene	<10 µg/kg	TM218		8480 M	1620 M	2450 M	2370 #	8880 M	2250 M
Benzo(b)fluoranthene	<15 µg/kg	TM218		10200 M	2010 M	3100 M	3070 #	11100 M	3810 M
Benzo(k)fluoranthene	<14 µg/kg	TM218		3940 M	755 M	1080 M	1200 #	3710 M	1320 M
Benzo(a)pyrene	<15 µg/kg	TM218		5920 M	1120 M	1750 M	1920 #	6270 M	2330 M
Indeno(1,2,3-cd)pyrene	<18 µg/kg	TM218		4950 M	944 M	1450 M	1440 #	5290 M	1940 M
Dibenzo(a,h)anthracene	<23 µg/kg	TM218		896 M	177 M	265 M	268 #	1000 M	338 M
Benzo(g,h,i)perylene	<24 µg/kg	TM218		3660 M	752 M	1160 M	1260 #	4060 M	1600 M
PAH, Total Detected USEPA 16	<118 µg/kg	TM218		106000	19800	30700	28700	109000	34800

Validated

CERTIFICATE OF ANALYSIS

SDG:	201212-45	**Client Reference:**	P18-669	**Report Number:**	583536
Location:	Llanwern	**Order Number:**		**Superseded Report:**	582539

PAH by GCMS

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	2BSE-7	2BSE-8	2BSE-9	2BSE-10	2BSE-11	2BSE-12
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	11/12/2020	11/12/2020	11/12/2020	11/12/2020	11/12/2020	11/12/2020
			Sample Time	.	.	.	.	.	.
			Date Received	12/12/2020	12/12/2020	12/12/2020	12/12/2020	12/12/2020	12/12/2020
			SDG Ref	201212-45	201212-45	201212-45	201212-45	201212-45	201212-45
			Lab Sample No.(s)	23419690	23419695	23419701	23419706	23419712	23419718
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		83	79.5	79.4	78.8	83.4	78.1
Acenaphthene-d10 % recovery**	%	TM218		83.3	82.9	81	83.6	83.4	82.5
Phenanthrene-d10 % recovery**	%	TM218		87.9	87.5	84	80.9	85.5	86.6
Chrysene-d12 % recovery**	%	TM218		81.3	85.1	81.8	91.6	84.2	84.6
Perylene-d12 % recovery**	%	TM218		70.6	71.8	79.6	87	81.4	71.4
Naphthalene	<9 µg/kg	TM218		2730 M	2040 M	1810 M	3160 M	1930 M	2960
Acenaphthylene	<12 µg/kg	TM218		1170 M	922 M	833 M	1350 M	498 M	1040
Acenaphthene	<8 µg/kg	TM218		495 M	107 M	109 M	153 M	80.3 M	153
Fluorene	<10 µg/kg	TM218		929 M	837 M	495 M	914 M	375 M	657
Phenanthrene	<15 µg/kg	TM218		8050 M	8180 M	4600 M	6900 M	2700 M	5740
Anthracene	<16 µg/kg	TM218		2510 M	2380 M	1350 M	2540 M	813 M	1710
Fluoranthene	<17 µg/kg	TM218		13100 M	11800 M	9200 M	13000 M	4040 M	10600
Pyrene	<15 µg/kg	TM218		9830 M	8810 M	6810 M	9720 M	3010 M	8050
Benz(a)anthracene	<14 µg/kg	TM218		4840 M	4270 M	4120 M	6290 M	1920 M	4250
Chrysene	<10 µg/kg	TM218		4590 M	4330 M	3690 M	5560 M	1710 M	4360
Benzo(b)fluoranthene	<15 µg/kg	TM218		5770 M	5410 M	5600 M	7290 M	2760 M	5660
Benzo(k)fluoranthene	<14 µg/kg	TM218		1870 M	1630 M	1920 M	2640 M	950 M	1640
Benzo(a)pyrene	<15 µg/kg	TM218		3430 M	3270 M	3300 M	4930 M	1630 M	3100
Indeno(1,2,3-cd)pyrene	<18 µg/kg	TM218		2680 M	2700 M	2750 M	3360 M	1310 M	2550
Dibenzo(a,h)anthracene	<23 µg/kg	TM218		485 M	455 M	504 M	781 M	211 M	487
Benzo(g,h,i)perylene	<24 µg/kg	TM218		2170 M	2210 M	2180 M	3290 M	1060 M	1970
PAH, Total Detected USEPA 16	<118 µg/kg	TM218		64600	59400	49300	71900	25000	54900

Validated

CERTIFICATE OF ANALYSIS

SDG:	201212-45	**Client Reference:**	P18-669	**Report Number:**	583536
Location:	Llanwern	**Order Number:**		**Superseded Report:**	582539

PAH by GCMS

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	2BSE-13	2BSE-14	2BSE-22	2BSE-23	2BSE-24	2BSE-25
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	11/12/2020	11/12/2020	11/12/2020	11/12/2020	11/12/2020	11/12/2020
			Sample Time	.	.	.	.	.	.
			Date Received	12/12/2020	12/12/2020	12/12/2020	12/12/2020	12/12/2020	12/12/2020
			SDG Ref	201212-45	201212-45	201212-45	201212-45	201212-45	201212-45
			Lab Sample No.(s)	23419728	23419733	23419739	23419751	23419758	23419763
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		87.2	85.7	82.4	81.5	80.2	80
Acenaphthene-d10 % recovery**	%	TM218		88.4	85.1	83.9	84.8	85.2	80.9
Phenanthrene-d10 % recovery**	%	TM218		87.4	87.7	86	88.6	92.7	83.4
Chrysene-d12 % recovery**	%	TM218		85.6	88.7	84.2	88.5	85.8	85.8
Perylene-d12 % recovery**	%	TM218		78.6	86.8	83.8	91	72.3	83.6
Naphthalene	<9 µg/kg	TM218		2800 M	2180 M	4160 M	1590 M	1160 M	3260 M
Acenaphthylene	<12 µg/kg	TM218		10600 M	706 M	1570 M	592 M	444 M	1090 M
Acenaphthene	<8 µg/kg	TM218		859 M	109 M	147 M	89.7 M	60.7 M	124 M
Fluorene	<10 µg/kg	TM218		19100 M	625 M	677 M	272 M	285 M	850 M
Phenanthrene	<15 µg/kg	TM218		99500 M	4460 M	6880 M	2520 M	2470 M	5250 M
Anthracene	<16 µg/kg	TM218		27900 M	1510 M	2030 M	674 M	781 M	2130 M
Fluoranthene	<17 µg/kg	TM218		90900 M	7490 M	12700 M	3960 M	3980 M	8170 M
Pyrene	<15 µg/kg	TM218		61100 M	5320 M	9440 M	2920 M	2940 M	6090 M
Benz(a)anthracene	<14 µg/kg	TM218		29700 M	3290 M	5750 M	1810 M	1560 M	3890 M
Chrysene	<10 µg/kg	TM218		21000 M	2880 M	4790 M	1460 M	1570 M	3480 M
Benzo(b)fluoranthene	<15 µg/kg	TM218		35000 M	4340 M	7110 M	2350 M	1980 M	4850 M
Benzo(k)fluoranthene	<14 µg/kg	TM218		11500 M	1380 M	2670 M	710 M	717 M	1620 M
Benzo(a)pyrene	<15 µg/kg	TM218		20700 M	2610 M	4340 M	1410 M	1090 M	2710 M
Indeno(1,2,3-cd)pyrene	<18 µg/kg	TM218		17200 M	2060 M	3790 M	1200 M	892 M	2150 M
Dibenzo(a,h)anthracene	<23 µg/kg	TM218		2740 M	354 M	625 M	197 M	167 M	419 M
Benzo(g,h,i)perylene	<24 µg/kg	TM218		13700 M	1710 M	2810 M	886 M	699 M	1650 M
PAH, Total Detected USEPA 16	<118 µg/kg	TM218		464000	41000	69500	22600	20800	47700

Validated

CERTIFICATE OF ANALYSIS

SDG:	201212-45	**Client Reference:**	P18-669	**Report Number:**	583536
Location:	Llanwern	**Order Number:**		**Superseded Report:**	582539

PAH by GCMS

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	2BSE-26	2BSE-27	2BSE-28	2BSE-29	2BSE-30	2BSE-31
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	11/12/2020	11/12/2020	11/12/2020	11/12/2020	11/12/2020	11/12/2020
			Sample Time	.	.	.	.	.	.
			Date Received	12/12/2020	12/12/2020	12/12/2020	12/12/2020	12/12/2020	12/12/2020
			SDG Ref	201212-45	201212-45	201212-45	201212-45	201212-45	201212-45
			Lab Sample No.(s)	23419769	23419775	23419781	23419786	23419792	23419798
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		83.7	80.6	81.5	78.7	84.3	82.3
Acenaphthene-d10 % recovery**	%	TM218		85.3	83	87.1	85.4	86.6	80.1
Phenanthrene-d10 % recovery**	%	TM218		87.5	89.8	87.3	91	89.4	82.5
Chrysene-d12 % recovery**	%	TM218		89	86.6	82.7	80.1	90.7	82.1
Perylene-d12 % recovery**	%	TM218		89	73.4	70	70.2	90.7	83.6
Naphthalene	<9 µg/kg	TM218		1580 M	1710 M	2160 M	2070 M	1740 M	3390 M
Acenaphthylene	<12 µg/kg	TM218		735 M	434 M	1100 M	652 M	683 M	905 M
Acenaphthene	<8 µg/kg	TM218		109 M	88.3 M	108 M	98.7 M	146 M	135 M
Fluorene	<10 µg/kg	TM218		667 M	403 M	708 M	428 M	699 M	673 M
Phenanthrene	<15 µg/kg	TM218		8850 M	3510 M	7230 M	3730 M	6450 M	5050 M
Anthracene	<16 µg/kg	TM218		1870 M	779 M	1920 M	994 M	2010 M	1410 M
Fluoranthene	<17 µg/kg	TM218		12300 M	4250 M	11300 M	6260 M	10500 M	8270 M
Pyrene	<15 µg/kg	TM218		9340 M	3070 M	8180 M	4810 M	7860 M	6220 M
Benz(a)anthracene	<14 µg/kg	TM218		4870 M	1720 M	3920 M	2460 M	4720 M	3800 M
Chrysene	<10 µg/kg	TM218		4240 M	1830 M	3860 M	2490 M	3560 M	3630 M
Benzo(b)fluoranthene	<15 µg/kg	TM218		6350 M	2200 M	4790 M	3230 M	4580 M	5310 M
Benzo(k)fluoranthene	<14 µg/kg	TM218		2060 M	748 M	1830 M	1120 M	1490 M	1930 M
Benzo(a)pyrene	<15 µg/kg	TM218		4010 M	1190 M	2800 M	1850 M	2570 M	3440 M
Indeno(1,2,3-cd)pyrene	<18 µg/kg	TM218		3240 M	1000 M	2340 M	1400 M	2010 M	2650 M
Dibenzo(a,h)anthracene	<23 µg/kg	TM218		484 M	197 M	414 M	259 M	373 M	557 M
Benzo(g,h,i)perylene	<24 µg/kg	TM218		2660 M	806 M	1920 M	1120 M	1570 M	2270 M
PAH, Total Detected USEPA 16	<118 µg/kg	TM218		63400	23900	54600	33000	51000	49600

Validated

CERTIFICATE OF ANALYSIS

SDG:	201212-45	**Client Reference:**	P18-669	**Report Number:**	583536
Location:	Llanwern	**Order Number:**		**Superseded Report:**	582539

PAH by GCMS

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	2BSE-32	2BSE-33	2BSE-34	2BSE-35	M33-1	M33-2
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.50 - 0.50	1.40 - 1.40
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	11/12/2020	11/12/2020	11/12/2020	11/12/2020	10/12/2020	10/12/2020
			Sample Time	.	.	.	.	.	.
			Date Received	12/12/2020	12/12/2020	12/12/2020	12/12/2020	12/12/2020	12/12/2020
			SDG Ref	201212-45	201212-45	201212-45	201212-45	201212-45	201212-45
			Lab Sample No.(s)	23419803	23419821	23419826	23419833	23419813	23419841
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		80.9	79	77.3	80.5	81.4	84.2
Acenaphthene-d10 % recovery**	%	TM218		85.7	84.8	83	80.7	86	84.4
Phenanthrene-d10 % recovery**	%	TM218		82.9	88.9	91	78.9	93.1	85.3
Chrysene-d12 % recovery**	%	TM218		92.2	85.5	86.1	77.7	83.2	86.1
Perylene-d12 % recovery**	%	TM218		82.3	72.5	73	76.2	74.4	90.6
Naphthalene	<9 µg/kg	TM218		3130 M	1880 M	1950 M	3280 M	10.4 M	<9 M
Acenaphthylene	<12 µg/kg	TM218		1250 M	531 M	711 M	9850 M	<12 M	<12 M
Acenaphthene	<8 µg/kg	TM218		160 M	90 M	104 M	649 M	<8 M	<8 M
Fluorene	<10 µg/kg	TM218		1030 M	398 M	441 M	13100 M	<10 M	<10 M
Phenanthrene	<15 µg/kg	TM218		8790 M	3310 M	4120 M	67700 M	24.7 M	22.8 M
Anthracene	<16 µg/kg	TM218		2010 M	858 M	1320 M	19900 M	<16 M	<16 M
Fluoranthene	<17 µg/kg	TM218		12400 M	5870 M	7470 M	76100 M	<17 M	39 M
Pyrene	<15 µg/kg	TM218		9260 M	4900 M	6200 M	50200 M	15.9 M	31.5 M
Benz(a)anthracene	<14 µg/kg	TM218		4960 M	3890 M	2990 M	25700 M	<14 M	20.4 M
Chrysene	<10 µg/kg	TM218		4590 M	4070 M	2890 M	22100 M	15.2 M	23.1 M
Benzo(b)fluoranthene	<15 µg/kg	TM218		5310 M	6040 M	3700 M	29800 M	19.2 M	40.4 M
Benzo(k)fluoranthene	<14 µg/kg	TM218		1660 M	1920 M	1170 M	10100 M	<14 M	<14 M
Benzo(a)pyrene	<15 µg/kg	TM218		3840 M	3290 M	2100 M	18900 M	<15 M	19.3 M
Indeno(1,2,3-cd)pyrene	<18 µg/kg	TM218		2640 M	1660 M	1670 M	15600 M	<18 M	20.6 M
Dibenzo(a,h)anthracene	<23 µg/kg	TM218		592 M	406 M	304 M	2600 M	<23 M	<23 M
Benzo(g,h,i)perylene	<24 µg/kg	TM218		2630 M	1260 M	1360 M	12000 M	<24 M	<24 M
PAH, Total Detected USEPA 16	<118 µg/kg	TM218		64200	40400	38500	377000	<118	217

CERTIFICATE OF ANALYSIS

SDG:	201212-45	**Client Reference:**	P18-669	**Report Number:**	583536
Location:	Llanwern	**Order Number:**		**Superseded Report:**	582539

PAH by GCMS

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	N33-1	N33-2				
			Depth (m)	0.30 - 0.30	1.60 - 1.60				
			Sample Type	Soil/Solid (S)	Soil/Solid (S)				
			Date Sampled	10/12/2020	10/12/2020				
			Sample Time	.	.				
			Date Received	12/12/2020	12/12/2020				
			SDG Ref	201212-45	201212-45				
			Lab Sample No.(s)	23419678	23419744				
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		82.4	79.6				
Acenaphthene-d10 % recovery**	%	TM218		82.1	83.5				
Phenanthrene-d10 % recovery**	%	TM218		83.4	90.5				
Chrysene-d12 % recovery**	%	TM218		84.7	84.5				
Perylene-d12 % recovery**	%	TM218		86.1	76.3				
Naphthalene	<9 µg/kg	TM218		414 M	<9 M				
Acenaphthylene	<12 µg/kg	TM218		177 M	<12 M				
Acenaphthene	<8 µg/kg	TM218		108 M	<8 M				
Fluorene	<10 µg/kg	TM218		120 M	<10 M				
Phenanthrene	<15 µg/kg	TM218		1210 M	<15 M				
Anthracene	<16 µg/kg	TM218		326 M	<16 M				
Fluoranthene	<17 µg/kg	TM218		2430 M	<17 M				
Pyrene	<15 µg/kg	TM218		1990 M	<15 M				
Benz(a)anthracene	<14 µg/kg	TM218		1150 M	<14 M				
Chrysene	<10 µg/kg	TM218		1050 M	<10 M				
Benzo(b)fluoranthene	<15 µg/kg	TM218		1750 M	<15 M				
Benzo(k)fluoranthene	<14 µg/kg	TM218		568 M	<14 M				
Benzo(a)pyrene	<15 µg/kg	TM218		1050 M	<15 M				
Indeno(1,2,3-cd)pyrene	<18 µg/kg	TM218		886 M	<18 M				
Dibenzo(a,h)anthracene	<23 µg/kg	TM218		132 M	<23 M				
Benzo(g,h,i)perylene	<24 µg/kg	TM218		798 M	<24 M				
PAH, Total Detected USEPA 16	<118 µg/kg	TM218		14200	<118				

Validated

CERTIFICATE OF ANALYSIS

SDG: 201212-45 **Client Reference:** P18-669 **Report Number:** 583536
Location: Llanwern **Order Number:** **Superseded Report:** 582539

TPH CWG (S)

Results Legend	
#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	2BSE-1	2BSE-2	2BSE-3	2BSE-4	2BSE-5	2BSE-6
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	10/12/2020	10/12/2020	10/12/2020	10/12/2020	10/12/2020	11/12/2020
			Sample Time	.	.	.	.	.	.
			Date Received	12/12/2020	12/12/2020	12/12/2020	12/12/2020	12/12/2020	12/12/2020
			SDG Ref	201212-45	201212-45	201212-45	201212-45	201212-45	201212-45
			Lab Sample No.(s)	23419848	23419856	23419865	23419873	23419881	23419682
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		56.5 4 @	16.8 4 @	19.2 4 @	39.4 4 @	32.6 4 @	30.4 4 @
Aliphatics >C5-C6	<10 µg/kg	TM089		<10 4 @	10.4 4 @	10.2 4 @	<10 4 @	12.2 4 @	<10 4 @
Aliphatics >C6-C8	<10 µg/kg	TM089		25 4 @	38 4 @	38.4 4 @	15.5 4 @	53.3 4 @	28 4 @
Aliphatics >C8-C10	<10 µg/kg	TM089		34.8 4 @	35.7 4 @	40.7 4 @	18.9 4 @	113 4 @	31.4 4 @
Aliphatics >C10-C12	<1000 µg/kg	TM414		<1000	1080	<1000	<1000	1780	<1000
Aliphatics >C12-C16	<1000 µg/kg	TM414		13500	7750	3690	1440	8340	7520
Aliphatics >C16-C21	<1000 µg/kg	TM414		71200	34500	15100	9260	39800	64000
Aliphatics >C21-C35	<1000 µg/kg	TM414		91800	38800	32800	23600	67100	53300
Aliphatics >C35-C44	<1000 µg/kg	TM414		30600	8880	8690	5780	21700	10100
Total Aliphatics >C10-C44	<5000 µg/kg	TM414		208000	91000	60800	40100	139000	136000
Total Aliphatics & Aromatics >C10-C44	<10000 µg/kg	TM414		475000	171000	139000	91100	406000	202000
Aromatics >EC5-EC7	<10 µg/kg	TM089		<10 4 @	<10 4 @	<10 4 @	<10 4 @	<10 4 @	<10 4 @
Aromatics >EC7-EC8	<10 µg/kg	TM089		<10 4 @	<10 4 @	<10 4 @	<10 4 @	<10 4 @	10.1 4 @
Aromatics >EC8-EC10	<10 µg/kg	TM089		23.9 4 @	24.2 4 @	27.1 4 @	12.2 4 @	75.5 4 @	20.2 4 @
Aromatics > EC10-EC12	<1000 µg/kg	TM414		8450	1810	2160	<1000	8960	2600
Aromatics > EC12-EC16	<1000 µg/kg	TM414		10800	6510	4610	1990	14600	4830
Aromatics > EC16-EC21	<1000 µg/kg	TM414		66100	23800	19300	11400	66500	18300
Aromatics > EC21-EC35	<1000 µg/kg	TM414		153000	44800	48800	33500	157000	37800
Aromatics >EC35-EC44	<1000 µg/kg	TM414		29000	2790	3730	3290	20700	2990
Aromatics > EC40-EC44	<1000 µg/kg	TM414		6240	<1000	<1000	<1000	4660	<1000
Total Aromatics > EC10-EC44	<5000 µg/kg	TM414		267000	79700	78600	51000	268000	66600
Total Aliphatics & Aromatics >C5-C44	<10000 µg/kg	TM414		475000	171000	140000	91200	407000	202000
Total Aliphatics >C5-C10	<50 µg/kg	TM089		59.7 4 @	84 4 @	89.3 4 @	<50 4 @	179 4 @	59.4 4 @
Total Aromatics >EC5-EC10	<50 µg/kg	TM089		<50 4 @	<50 4 @	<50 4 @	<50 4 @	75.5 4 @	<50 4 @
GRO >C5-C10	<20 µg/kg	TM089		59.7 4 @	84 4 @	89.3 4 @	<20 4 @	254 4 @	59.4 4 @

Validated

CERTIFICATE OF ANALYSIS

SDG: 201212-45 **Client Reference:** P18-669 **Report Number:** 583536
Location: Llanwern **Order Number:** **Superseded Report:** 582539

TPH CWG (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	2BSE-7	2BSE-8	2BSE-9	2BSE-10	2BSE-11	2BSE-12
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	11/12/2020	11/12/2020	11/12/2020	11/12/2020	11/12/2020	11/12/2020
			Sample Time	.	.	.	.	.	.
			Date Received	12/12/2020	12/12/2020	12/12/2020	12/12/2020	12/12/2020	12/12/2020
			SDG Ref	201212-45	201212-45	201212-45	201212-45	201212-45	201212-45
			Lab Sample No.(s)	23419690	23419695	23419701	23419706	23419712	23419718
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		21.2 4 @	24.4 4 @	27.2 4 @	27.3 4 @	23.3 4 @	20.1 4 @
Aliphatics >C5-C6	<10 µg/kg	TM089		<10 4 @	<10 4 @	17.3 4 @	<10 4 @	<10 4 @	<10 4 @
Aliphatics >C6-C8	<10 µg/kg	TM089		23.9 4 @	19.4 4 @	57.5 4 @	33.9 4 @	20 4 @	36.1 4 @
Aliphatics >C8-C10	<10 µg/kg	TM089		20.5 4 @	21.6 4 @	56.4 4 @	37.3 4 @	20 4 @	39.3 4 @
Aliphatics >C10-C12	<1000 µg/kg	TM414		1040	<1000	1150	2310	<1000	<1000
Aliphatics >C12-C16	<1000 µg/kg	TM414		5010	3680	6070	8350	2850	5340
Aliphatics >C16-C21	<1000 µg/kg	TM414		23500	15700	20800	35300	17700	46700
Aliphatics >C21-C35	<1000 µg/kg	TM414		42000	36300	42000	65900	38900	56400
Aliphatics >C35-C44	<1000 µg/kg	TM414		9500	10300	11800	17700	6050	13400
Total Aliphatics >C10-C44	<5000 µg/kg	TM414		81000	67000	81800	130000	65800	122000
Total Aliphatics & Aromatics >C10-C44	<10000 µg/kg	TM414		238000	199000	240000	370000	175000	326000
Aromatics >EC5-EC7	<10 µg/kg	TM089		<10 4 @	<10 4 @	<10 4 @	<10 4 @	<10 4 @	<10 4 @
Aromatics >EC7-EC8	<10 µg/kg	TM089		<10 4 @	<10 4 @	11.5 4 @	<10 4 @	<10 4 @	<10 4 @
Aromatics >EC8-EC10	<10 µg/kg	TM089		13.7 4 @	14 4 @	38 4 @	24.9 4 @	13.3 4 @	26.5 4 @
Aromatics > EC10-EC12	<1000 µg/kg	TM414		3760	2600	2600	7320	2970	5250
Aromatics > EC12-EC16	<1000 µg/kg	TM414		8790	5860	6970	12700	5260	7630
Aromatics > EC16-EC21	<1000 µg/kg	TM414		39100	32300	38900	60600	25300	49900
Aromatics > EC21-EC35	<1000 µg/kg	TM414		94300	81500	99500	139000	68300	123000
Aromatics >EC35-EC44	<1000 µg/kg	TM414		11100	9430	10600	21100	7230	17600
Aromatics > EC40-EC44	<1000 µg/kg	TM414		2000	1190	1360	4190	1190	2320
Total Aromatics > EC10-EC44	<5000 µg/kg	TM414		157000	132000	159000	241000	109000	203000
Total Aliphatics & Aromatics >C5-C44	<10000 µg/kg	TM414		238000	199000	241000	370000	175000	326000
Total Aliphatics >C5-C10	<50 µg/kg	TM089		<50 4 @	<50 4 @	131 4 @	71.2 4 @	<50 4 @	75.3 4 @
Total Aromatics >EC5-EC10	<50 µg/kg	TM089		<50 4 @	<50 4 @	<50 4 @	<50 4 @	<50 4 @	<50 4 @
GRO >C5-C10	<20 µg/kg	TM089		<20 4 @	<20 4 @	131 4 @	71.2 4 @	<20 4 @	75.3 4 @

Validated

CERTIFICATE OF ANALYSIS

SDG: 201212-45 **Client Reference:** P18-669 **Report Number:** 583536
Location: Llanwern **Order Number:** **Superseded Report:** 582539

TPH CWG (S)

Results Legend	
#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	2BSE-13	2BSE-14	2BSE-22	2BSE-23	2BSE-24	2BSE-25
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	11/12/2020	11/12/2020	11/12/2020	11/12/2020	11/12/2020	11/12/2020
			Sample Time	.	.	.	.	.	.
			Date Received	12/12/2020	12/12/2020	12/12/2020	12/12/2020	12/12/2020	12/12/2020
			SDG Ref	201212-45	201212-45	201212-45	201212-45	201212-45	201212-45
			Lab Sample No.(s)	23419728	23419733	23419739	23419751	23419758	23419763
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		35.4 4 @	19.2 4 @	45.7 4 @	20.5 4 @	23.1 4 @	42.7 4 @
Aliphatics >C5-C6	<10 µg/kg	TM089		<10 4 @	14.3 4 @	<10 4 @	<10 4 @	<10 4 @	<10 4 @
Aliphatics >C6-C8	<10 µg/kg	TM089		30.4 4 @	59.5 4 @	25.7 4 @	16.5 4 @	25.4 4 @	39.4 4 @
Aliphatics >C8-C10	<10 µg/kg	TM089		33.6 4 @	60.7 4 @	33.9 4 @	16.5 4 @	25.4 4 @	71.9 4 @
Aliphatics >C10-C12	<1000 µg/kg	TM414		1250	<1000	<1000	<1000	1830	1610
Aliphatics >C12-C16	<1000 µg/kg	TM414		4800	1870	10900	2950	5380	7330
Aliphatics >C16-C21	<1000 µg/kg	TM414		36100	13100	54700	12900	13600	32200
Aliphatics >C21-C35	<1000 µg/kg	TM414		41000	20600	73800	21100	42700	51500
Aliphatics >C35-C44	<1000 µg/kg	TM414		10700	4210	30300	4020	15100	20300
Total Aliphatics >C10-C44	<5000 µg/kg	TM414		93800	40100	170000	41600	78600	113000
Total Aliphatics & Aromatics >C10-C44	<10000 µg/kg	TM414		212000	183000	428000	115000	189000	403000
Aromatics >EC5-EC7	<10 µg/kg	TM089		<10 4 @	10.7 4 @	<10 4 @	<10 4 @	<10 4 @	<10 4 @
Aromatics >EC7-EC8	<10 µg/kg	TM089		<10 4 @	13.1 4 @	<10 4 @	<10 4 @	<10 4 @	10.4 4 @
Aromatics >EC8-EC10	<10 µg/kg	TM089		22.8 4 @	40.5 4 @	22.2 4 @	11.8 4 @	16.9 4 @	47.6 4 @
Aromatics > EC10-EC12	<1000 µg/kg	TM414		3250	3050	7510	3710	3270	9660
Aromatics > EC12-EC16	<1000 µg/kg	TM414		5640	4870	9290	5120	6540	15200
Aromatics > EC16-EC21	<1000 µg/kg	TM414		31000	34300	70200	21800	26500	76400
Aromatics > EC21-EC35	<1000 µg/kg	TM414		70100	89500	150000	39900	67300	163000
Aromatics >EC35-EC44	<1000 µg/kg	TM414		8240	11000	21400	2470	6550	26700
Aromatics > EC40-EC44	<1000 µg/kg	TM414		1090	1970	3880	<1000	<1000	3390
Total Aromatics > EC10-EC44	<5000 µg/kg	TM414		118000	143000	258000	73000	110000	290000
Total Aliphatics & Aromatics >C5-C44	<10000 µg/kg	TM414		212000	183000	428000	115000	189000	404000
Total Aliphatics >C5-C10	<50 µg/kg	TM089		64 4 @	134 4 @	59.7 4 @	<50 4 @	50.8 4 @	111 4 @
Total Aromatics >EC5-EC10	<50 µg/kg	TM089		<50 4 @	64.3 4 @	<50 4 @	<50 4 @	<50 4 @	58 4 @
GRO >C5-C10	<20 µg/kg	TM089		64 4 @	199 4 @	59.7 4 @	<20 4 @	50.8 4 @	169 4 @

Validated

CERTIFICATE OF ANALYSIS

SDG: 201212-45 **Client Reference:** P18-669 **Report Number:** 583536
Location: Llanwern **Order Number:** **Superseded Report:** 582539

TPH CWG (S)

Results Legend	
#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	2BSE-26	2BSE-27	2BSE-28	2BSE-29	2BSE-30	2BSE-31
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	11/12/2020	11/12/2020	11/12/2020	11/12/2020	11/12/2020	11/12/2020
			Sample Time	.	.	.	.	.	.
			Date Received	12/12/2020	12/12/2020	12/12/2020	12/12/2020	12/12/2020	12/12/2020
			SDG Ref	201212-45	201212-45	201212-45	201212-45	201212-45	201212-45
			Lab Sample No.(s)	23419769	23419775	23419781	23419786	23419792	23419798
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		34.8 4 @	29.2 4 @	31.4 4 @	23.2 4 @	34.6 4 @	41.2 4 @
Aliphatics >C5-C6	<10 µg/kg	TM089		14.8 4 @	10.7 4 @	21.1 4 @	<10 4 @	13 4 @	10.5 4 @
Aliphatics >C6-C8	<10 µg/kg	TM089		65 4 @	41.7 4 @	72.5 4 @	38.7 4 @	50.7 4 @	39.8 4 @
Aliphatics >C8-C10	<10 µg/kg	TM089		76.4 4 @	45.2 4 @	86.6 4 @	33.9 4 @	53.1 4 @	45.6 4 @
Aliphatics >C10-C12	<1000 µg/kg	TM414		<1000	<1000	<1000	<1000	<1000	<1000
Aliphatics >C12-C16	<1000 µg/kg	TM414		2070	5540	4770	3620	3790	4260
Aliphatics >C16-C21	<1000 µg/kg	TM414		14100	33700	31800	16800	18500	18600
Aliphatics >C21-C35	<1000 µg/kg	TM414		38800	41900	48400	33800	34200	44100
Aliphatics >C35-C44	<1000 µg/kg	TM414		8330	6550	13600	6310	7820	5610
Total Aliphatics >C10-C44	<5000 µg/kg	TM414		63400	88300	99100	61000	65200	73400
Total Aliphatics & Aromatics >C10-C44	<10000 µg/kg	TM414		227000	156000	303000	174000	256000	178000
Aromatics >EC5-EC7	<10 µg/kg	TM089		<10 4 @	<10 4 @	11.7 4 @	<10 4 @	<10 4 @	<10 4 @
Aromatics >EC7-EC8	<10 µg/kg	TM089		<10 4 @	11.9 4 @	18.7 4 @	<10 4 @	14.2 4 @	<10 4 @
Aromatics >EC8-EC10	<10 µg/kg	TM089		50.2 4 @	29.8 4 @	58.5 4 @	21.8 4 @	35.4 4 @	30.4 4 @
Aromatics > EC10-EC12	<1000 µg/kg	TM414		2580	2850	4940	2670	2810	2970
Aromatics > EC12-EC16	<1000 µg/kg	TM414		3330	6040	8870	5870	9380	5020
Aromatics > EC16-EC21	<1000 µg/kg	TM414		51600	18200	52800	28000	51800	25100
Aromatics > EC21-EC35	<1000 µg/kg	TM414		92100	37700	121000	69400	114000	65500
Aromatics >EC35-EC44	<1000 µg/kg	TM414		13900	2950	15500	7000	12900	6000
Aromatics > EC40-EC44	<1000 µg/kg	TM414		2090	<1000	1670	<1000	2300	<1000
Total Aromatics > EC10-EC44	<5000 µg/kg	TM414		163000	67800	204000	113000	191000	105000
Total Aliphatics & Aromatics >C5-C44	<10000 µg/kg	TM414		227000	156000	303000	174000	256000	178000
Total Aliphatics >C5-C10	<50 µg/kg	TM089		156 4 @	97.6 4 @	180 4 @	72.6 4 @	117 4 @	95.9 4 @
Total Aromatics >EC5-EC10	<50 µg/kg	TM089		50.2 4 @	<50 4 @	88.9 4 @	<50 4 @	<50 4 @	<50 4 @
GRO >C5-C10	<20 µg/kg	TM089		206 4 @	97.6 4 @	269 4 @	72.6 4 @	117 4 @	95.9 4 @

Validated

CERTIFICATE OF ANALYSIS

SDG: 201212-45 **Client Reference:** P18-669 **Report Number:** 583536
Location: Llanwern **Order Number:** **Superseded Report:** 582539

TPH CWG (S)

Results Legend	
#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	2BSE-32	2BSE-33	2BSE-34	2BSE-35	M33-1	M33-2
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.50 - 0.50	1.40 - 1.40
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	11/12/2020	11/12/2020	11/12/2020	11/12/2020	10/12/2020	10/12/2020
			Sample Time	.	.	.	.	.	.
			Date Received	12/12/2020	12/12/2020	12/12/2020	12/12/2020	12/12/2020	12/12/2020
			SDG Ref	201212-45	201212-45	201212-45	201212-45	201212-45	201212-45
			Lab Sample No.(s)	23419803	23419821	23419826	23419833	23419813	23419841
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		20.4 4 @	16.4 4 @	22.5 4 @	20 4 @	86.5 @	96.3 @
Aliphatics >C5-C6	<10 µg/kg	TM089		11.4 4 @	13 4 @	<10 4 @	11.6 4 @	<10 @	<10 @
Aliphatics >C6-C8	<10 µg/kg	TM089		41 4 @	53.3 4 @	31.6 4 @	51 4 @	<10 @	<10 @
Aliphatics >C8-C10	<10 µg/kg	TM089		43.3 4 @	58.1 4 @	33.9 4 @	58 4 @	<10 @	<10 @
Aliphatics >C10-C12	<1000 µg/kg	TM414		2740	<1000	<1000	<1000	<1000	<1000
Aliphatics >C12-C16	<1000 µg/kg	TM414		9510	3590	3480	3750	<1000	<1000
Aliphatics >C16-C21	<1000 µg/kg	TM414		35700	20800	19900	25700	<1000	<1000
Aliphatics >C21-C35	<1000 µg/kg	TM414		47600	32800	31800	40400	19500	5250
Aliphatics >C35-C44	<1000 µg/kg	TM414		13400	6860	8540	8930	2530	<1000
Total Aliphatics >C10-C44	<5000 µg/kg	TM414		109000	64700	64700	79200	22600	5580
Total Aliphatics & Aromatics >C10-C44	<10000 µg/kg	TM414		302000	208000	169000	242000	32100	<10000
Aromatics >EC5-EC7	<10 µg/kg	TM089		<10 4 @	<10 4 @	<10 4 @	10.4 4 @	<10 @	<10 @
Aromatics >EC7-EC8	<10 µg/kg	TM089		<10 4 @	<10 4 @	<10 4 @	12.8 4 @	<10 @	<10 @
Aromatics >EC8-EC10	<10 µg/kg	TM089		28.5 4 @	39.1 4 @	22.6 4 @	38.3 4 @	<10 @	<10 @
Aromatics > EC10-EC12	<1000 µg/kg	TM414		6950	3220	2930	5320	<1000	<1000
Aromatics > EC12-EC16	<1000 µg/kg	TM414		12400	6410	4840	8680	<1000	<1000
Aromatics > EC16-EC21	<1000 µg/kg	TM414		49900	31000	23200	39900	<1000	<1000
Aromatics > EC21-EC35	<1000 µg/kg	TM414		109000	91100	64500	97600	8390	<1000
Aromatics >EC35-EC44	<1000 µg/kg	TM414		14900	11200	8900	11600	<1000	<1000
Aromatics > EC40-EC44	<1000 µg/kg	TM414		1520	1440	<1000	1950	<1000	<1000
Total Aromatics > EC10-EC44	<5000 µg/kg	TM414		193000	143000	104000	163000	9480	<5000
Total Aliphatics & Aromatics >C5-C44	<10000 µg/kg	TM414		302000	208000	169000	242000	32100	<10000
Total Aliphatics >C5-C10	<50 µg/kg	TM089		95.8 4 @	124 4 @	65.5 4 @	121 4 @	<50 @	<50 @
Total Aromatics >EC5-EC10	<50 µg/kg	TM089		<50 4 @	<50 4 @	<50 4 @	61.5 4 @	<50 @	<50 @
GRO >C5-C10	<20 µg/kg	TM089		95.8 4 @	124 4 @	65.5 4 @	182 4 @	<20 @	<20 @

CERTIFICATE OF ANALYSIS

SDG:	201212-45	**Client Reference:**	P18-669	**Report Number:**	583536
Location:	Llanwern	**Order Number:**		**Superseded Report:**	582539

TPH CWG (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	N33-1	N33-2				
			Depth (m)	0.30 - 0.30	1.60 - 1.60				
			Sample Type	Soil/Solid (S)	Soil/Solid (S)				
			Date Sampled	10/12/2020	10/12/2020				
			Sample Time	.	.				
			Date Received	12/12/2020	12/12/2020				
			SDG Ref	201212-45	201212-45				
			Lab Sample No.(s)	23419678	23419744				
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		74 @	94.9 @				
Aliphatics >C5-C6	<10 µg/kg	TM089		<10 @	<10 @				
Aliphatics >C6-C8	<10 µg/kg	TM089		11.1 @	<10 @				
Aliphatics >C8-C10	<10 µg/kg	TM089		16.7 @	<10 @				
Aliphatics >C10-C12	<1000 µg/kg	TM414		<1000	<1000				
Aliphatics >C12-C16	<1000 µg/kg	TM414		3150	<1000				
Aliphatics >C16-C21	<1000 µg/kg	TM414		11500	<1000				
Aliphatics >C21-C35	<1000 µg/kg	TM414		67700	7910				
Aliphatics >C35-C44	<1000 µg/kg	TM414		37100	2030				
Total Aliphatics >C10-C44	<5000 µg/kg	TM414		120000	9940				
Total Aliphatics & Aromatics >C10-C44	<10000 µg/kg	TM414		160000	14500				
Aromatics >EC5-EC7	<10 µg/kg	TM089		<10 @	<10 @				
Aromatics >EC7-EC8	<10 µg/kg	TM089		<10 @	<10 @				
Aromatics >EC8-EC10	<10 µg/kg	TM089		11.1 @	<10 @				
Aromatics > EC10-EC12	<1000 µg/kg	TM414		<1000	<1000				
Aromatics > EC12-EC16	<1000 µg/kg	TM414		1730	<1000				
Aromatics > EC16-EC21	<1000 µg/kg	TM414		6440	<1000				
Aromatics > EC21-EC35	<1000 µg/kg	TM414		28700	3440				
Aromatics >EC35-EC44	<1000 µg/kg	TM414		3740	<1000				
Aromatics > EC40-EC44	<1000 µg/kg	TM414		<1000	<1000				
Total Aromatics > EC10-EC44	<5000 µg/kg	TM414		40900	<5000				
Total Aliphatics & Aromatics >C5-C44	<10000 µg/kg	TM414		160000	<10000				
Total Aliphatics >C5-C10	<50 µg/kg	TM089		<50 @	<50 @				
Total Aromatics >EC5-EC10	<50 µg/kg	TM089		<50 @	<50 @				
GRO >C5-C10	<20 µg/kg	TM089		<20 @	<20 @				

Validated

CERTIFICATE OF ANALYSIS

SDG:	201212-45	**Client Reference:**	P18-669	**Report Number:**	583536
Location:	Llanwern	**Order Number:**		**Superseded Report:**	582539

VOC MS (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	2BSE-1	2BSE-2	2BSE-3	2BSE-4	2BSE-5	2BSE-6
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	10/12/2020	10/12/2020	10/12/2020	10/12/2020	10/12/2020	11/12/2020
			Sample Time	.	.	.	.	.	.
			Date Received	12/12/2020	12/12/2020	12/12/2020	12/12/2020	12/12/2020	12/12/2020
			SDG Ref	201212-45	201212-45	201212-45	201212-45	201212-45	201212-45
			Lab Sample No.(s)	23419848	23419856	23419865	23419873	23419881	23419682
			AGS Reference						
Dibromofluoromethane**	%	TM116		102 @	93.2 @	102 @	103 @	106 @	98.9 @
Toluene-d8**	%	TM116		93.6 @	86.1 @	101 @	90.4 @	88.9 @	91.9 @
4-Bromofluorobenzene**	%	TM116		94.4 @	76.2 @	95.7 @	87.9 @	86.7 @	88.3 @
Methyl Tertiary Butyl Ether	<10 µg/kg	TM116		<200 @ M	<200 @ M	<2000 @ M	<200 @ #	<200 @ M	<200 @ M
Benzene	<9 µg/kg	TM116		<180 @ M	<180 @ M	<1800 @ M	<180 @ #	<180 @ M	<180 @ M
Toluene	<7 µg/kg	TM116		<140 @ M	<140 @ M	<1400 @ M	<140 @ #	<140 @ M	<140 @ M
Ethylbenzene	<4 µg/kg	TM116		<80 @ M	<80 @ M	<800 @ M	<80 @ #	<80 @ M	<80 @ M
p/m-Xylene	<10 µg/kg	TM116		<200 @ #	<200 @ #	<2000 @ #	<200 @ #	<200 @ #	<200 @ #
o-Xylene	<10 µg/kg	TM116		<200 @ M	<200 @ M	<2000 @ M	<200 @ #	<200 @ M	<200 @ M
Naphthalene	<13 µg/kg	TM116		468 M	<260 M	429 M	306 #	2730 M	<260 M
Sum of Detected Xylenes	<0.02 mg/kg	TM116		<0.4 @	<0.4 @	<4 @	<0.4 @	<0.4 @	<0.4 @
Sum of BTEX	<40 µg/kg	TM116		<800 @	<800 @	<8000 @	<800 @	<800 @	<800 @

Validated

CERTIFICATE OF ANALYSIS

SDG:	201212-45	**Client Reference:**	P18-669	**Report Number:**	583536
Location:	Llanwern	**Order Number:**		**Superseded Report:**	582539

VOC MS (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	2BSE-7	2BSE-8	2BSE-9	2BSE-10	2BSE-11	2BSE-12
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	11/12/2020	11/12/2020	11/12/2020	11/12/2020	11/12/2020	11/12/2020
			Sample Time	.	.	.	.	.	.
			Date Received	12/12/2020	12/12/2020	12/12/2020	12/12/2020	12/12/2020	12/12/2020
			SDG Ref	201212-45	201212-45	201212-45	201212-45	201212-45	201212-45
			Lab Sample No.(s)	23419690	23419695	23419701	23419706	23419712	23419718
			AGS Reference						
Dibromofluoromethane**	%	TM116		94 @	92.8 @	97.4 @	95.7 @	95.5 @	93.1 @
Toluene-d8**	%	TM116		90.4 @	86.1 @	88 @	97.6 @	95.1 @	91.2 @
4-Bromofluorobenzene**	%	TM116		76.2 @	77.5 @	73.7 @	83.5 @	79.5 @	85.4 @
Methyl Tertiary Butyl Ether	<10 µg/kg	TM116		<200 @ M	<200 @ M	<200 @ M	<200 @ M	<200 @ M	<200 @ M
Benzene	<9 µg/kg	TM116		<180 @ M	<180 @ M	<180 @ M	<180 @ M	<180 @ M	<180 @ M
Toluene	<7 µg/kg	TM116		<140 @ M	<140 @ M	<140 @ M	<140 @ M	<140 @ M	<140 @ M
Ethylbenzene	<4 µg/kg	TM116		<80 @ M	<80 @ M	<80 @ M	<80 @ M	<80 @ M	<80 @ M
p/m-Xylene	<10 µg/kg	TM116		<200 @ #	<200 @ #	<200 @ #	<200 @ #	<200 @ #	<200 @ #
o-Xylene	<10 µg/kg	TM116		<200 @ M	<200 @ M	<200 @ M	<200 @ M	<200 @ M	<200 @ M
Naphthalene	<13 µg/kg	TM116		394 M	<260 M	342 M	499 M	<260 M	516 M
Sum of Detected Xylenes	<0.02 mg/kg	TM116		<0.4 @	<0.4 @	<0.4 @	<0.4 @	<0.4 @	<0.4 @
Sum of BTEX	<40 µg/kg	TM116		<800 @	<800 @	<800 @	<800 @	<800 @	<800 @

Validated

CERTIFICATE OF ANALYSIS

SDG:	201212-45	**Client Reference:**	P18-669	**Report Number:**	583536
Location:	Llanwern	**Order Number:**		**Superseded Report:**	582539

VOC MS (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	2BSE-13	2BSE-14	2BSE-22	2BSE-23	2BSE-24	2BSE-25
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	11/12/2020	11/12/2020	11/12/2020	11/12/2020	11/12/2020	11/12/2020
			Sample Time	.	.	.	.	.	.
			Date Received	12/12/2020	12/12/2020	12/12/2020	12/12/2020	12/12/2020	12/12/2020
			SDG Ref	201212-45	201212-45	201212-45	201212-45	201212-45	201212-45
			Lab Sample No.(s)	23419728	23419733	23419739	23419751	23419758	23419763
			AGS Reference						
Dibromofluoromethane**	%	TM116		98.2 @	94 @	105 @	94.8 @	96 @	109 @
Toluene-d8**	%	TM116		90.7 @	91.3 @	93.1 @	92.3 @	91.4 @	91.8 @
4-Bromofluorobenzene**	%	TM116		83 @	83.2 @	83.4 @	80.1 @	80.8 @	90.9 @
Methyl Tertiary Butyl Ether	<10 µg/kg	TM116		<200 @ M	<200 @ M	<200 @ M	<200 @ M	<200 @ M	<200 @ M
Benzene	<9 µg/kg	TM116		<180 @ M	<180 @ M	<180 @ M	<180 @ M	<180 @ M	<180 @ M
Toluene	<7 µg/kg	TM116		<140 @ M	<140 @ M	<140 @ M	<140 @ M	<140 @ M	<140 @ M
Ethylbenzene	<4 µg/kg	TM116		<80 @ M	<80 @ M	<80 @ M	<80 @ M	<80 @ M	<80 @ M
p/m-Xylene	<10 µg/kg	TM116		<200 @ #	<200 @ #	<200 @ #	<200 @ #	<200 @ #	<200 @ #
o-Xylene	<10 µg/kg	TM116		<200 @ M	<200 @ M	<200 @ M	<200 @ M	<200 @ M	<200 @ M
Naphthalene	<13 µg/kg	TM116		555 M	486 M	236 M	480 M	<260 M	1280 M
Sum of Detected Xylenes	<0.02 mg/kg	TM116		<0.4 @	<0.4 @	<0.4 @	<0.4 @	<0.4 @	<0.4 @
Sum of BTEX	<40 µg/kg	TM116		<800 @	<800 @	<800 @	<800 @	<800 @	<800 @

Validated

CERTIFICATE OF ANALYSIS

SDG:	201212-45	**Client Reference:**	P18-669	**Report Number:**	583536
Location:	Llanwern	**Order Number:**		**Superseded Report:**	582539

VOC MS (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	2BSE-26	2BSE-27	2BSE-28	2BSE-29	2BSE-30	2BSE-31
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	11/12/2020	11/12/2020	11/12/2020	11/12/2020	11/12/2020	11/12/2020
			Sample Time	.	.	.	.	.	.
			Date Received	12/12/2020	12/12/2020	12/12/2020	12/12/2020	12/12/2020	12/12/2020
			SDG Ref	201212-45	201212-45	201212-45	201212-45	201212-45	201212-45
			Lab Sample No.(s)	23419769	23419775	23419781	23419786	23419792	23419798
			AGS Reference						
Dibromofluoromethane**	%	TM116		99.3 @	94.4 @	96.5 @	103 @	91.6 @	94.8 @
Toluene-d8**	%	TM116		88.4 @	89.5 @	87.9 @	101 @	95.7 @	92.3 @
4-Bromofluorobenzene**	%	TM116		81.8 @	82.2 @	78.1 @	94.3 @	78.4 @	83.4 @
Methyl Tertiary Butyl Ether	<10 µg/kg	TM116		<200 @ M	<200 @ M	<200 @ M	<2000 @ M	<200 @ M	<200 @ M
Benzene	<9 µg/kg	TM116		<180 @ M	<180 @ M	<180 @ M	<1800 @ M	<180 @ M	<180 @ M
Toluene	<7 µg/kg	TM116		<140 @ M	<140 @ M	<140 @ M	<1400 @ M	<140 @ M	<140 @ M
Ethylbenzene	<4 µg/kg	TM116		<80 @ M	<80 @ M	<80 @ M	<800 @ M	<80 @ M	<80 @ M
p/m-Xylene	<10 µg/kg	TM116		<200 @ #	<200 @ #	<200 @ #	<2000 @ #	<200 @ #	<200 @ #
o-Xylene	<10 µg/kg	TM116		<200 @ M	<200 @ M	<200 @ M	<2000 @ M	<200 @ M	<200 @ M
Naphthalene	<13 µg/kg	TM116		594 M	577 M	783 M	511 M	422 M	<260 M
Sum of Detected Xylenes	<0.02 mg/kg	TM116		<0.4 @	<0.4 @	<0.4 @	<4 @	<0.4 @	<0.4 @
Sum of BTEX	<40 µg/kg	TM116		<800 @	<800 @	<800 @	<8000 @	<800 @	<800 @

Validated

CERTIFICATE OF ANALYSIS

SDG:	201212-45	**Client Reference:**	P18-669	**Report Number:**	583536
Location:	Llanwern	**Order Number:**		**Superseded Report:**	582539

VOC MS (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	2BSE-32	2BSE-33	2BSE-34	2BSE-35	M33-1	M33-2
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.50 - 0.50	1.40 - 1.40
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	11/12/2020	11/12/2020	11/12/2020	11/12/2020	10/12/2020	10/12/2020
			Sample Time	.	.	.	.	.	.
			Date Received	12/12/2020	12/12/2020	12/12/2020	12/12/2020	12/12/2020	12/12/2020
			SDG Ref	201212-45	201212-45	201212-45	201212-45	201212-45	201212-45
			Lab Sample No.(s)	23419803	23419821	23419826	23419833	23419813	23419841
			AGS Reference						
Dibromofluoromethane**	%	TM116		94.5 @	95.7 @	97.2 @	104 @	102 @	91.9 @
Toluene-d8**	%	TM116		88.3 @	88 @	88.6 @	94.5 @	93.6 @	95.8 @
4-Bromofluorobenzene**	%	TM116		78.4 @	80.6 @	78.9 @	90.9 @	88.8 @	100 @
Methyl Tertiary Butyl Ether	<10 µg/kg	TM116		<200 @ M	<200 @ M	<200 @ M	<200 @ M	<10 @ M	<200 @ M
Benzene	<9 µg/kg	TM116		<180 @ M	<180 @ M	<180 @ M	<180 @ M	<9 @ M	<180 @ M
Toluene	<7 µg/kg	TM116		<140 @ M	<140 @ M	<140 @ M	<140 @ M	<7 @ M	<140 @ M
Ethylbenzene	<4 µg/kg	TM116		<80 @ M	<80 @ M	<80 @ M	<80 @ M	<4 @ M	<80 @ M
p/m-Xylene	<10 µg/kg	TM116		<200 @ #	<200 @ #	<200 @ #	<200 @ #	<10 @ #	<200 @ #
o-Xylene	<10 µg/kg	TM116		<200 @ M	<200 @ M	<200 @ M	<200 @ M	<10 @ M	<200 @ M
Naphthalene	<13 µg/kg	TM116		564 M	2330 M	533 M	389 M	<13 M	<13 M
Sum of Detected Xylenes	<0.02 mg/kg	TM116		<0.4 @	<0.4 @	<0.4 @	<0.4 @	<0.02 @	<0.4 @
Sum of BTEX	<40 µg/kg	TM116		<800 @	<800 @	<800 @	<800 @	<40 @	<800 @

CERTIFICATE OF ANALYSIS

SDG:	201212-45	**Client Reference:**	P18-669	**Report Number:**	583536
Location:	Llanwern	**Order Number:**		**Superseded Report:**	582539

VOC MS (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	N33-1	N33-2
			Depth (m)	0.30 - 0.30	1.60 - 1.60
			Sample Type	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	10/12/2020	10/12/2020
			Sample Time	.	.
			Date Received	12/12/2020	12/12/2020
			SDG Ref	201212-45	201212-45
			Lab Sample No.(s)	23419678	23419744
			AGS Reference		
Dibromofluoromethane**	%	TM116		82 @	108 @
Toluene-d8**	%	TM116		84.5 @	96.2 @
4-Bromofluorobenzene**	%	TM116		74.3 @	104 @
Methyl Tertiary Butyl Ether	<10 µg/kg	TM116		<10 @ M	<10 @ M
Benzene	<9 µg/kg	TM116		<9 @ M	<9 @ M
Toluene	<7 µg/kg	TM116		<7 @ M	<7 @ M
Ethylbenzene	<4 µg/kg	TM116		<4 @ M	<4 @ M
p/m-Xylene	<10 µg/kg	TM116		<10 @ #	<10 @ #
o-Xylene	<10 µg/kg	TM116		<10 @ M	<10 @ M
Naphthalene	<13 µg/kg	TM116		34 M	<13 M
Sum of Detected Xylenes	<0.02 mg/kg	TM116		<0.02 @	<0.02 @
Sum of BTEX	<40 µg/kg	TM116		<40 @	<40 @

CERTIFICATE OF ANALYSIS

SDG:	201212-45	**Client Reference:**	P18-669	**Report Number:**	583536
Location:	Llanwern	**Order Number:**		**Superseded Report:**	582539

Asbestos Identification - Solid Samples

Results Legend

#	ISO17025 accredited.
M	*m*CERTS accredited.
*	Subcontracted test.
(F)	Trigger breach confirmed
1-5&+$@	Sample deviation (see appendix)

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthophyllite	Fibrous Tremolite	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	2BSE-1 0.00 - 0.00 SOLID 10/12/2020 00:00:00 12/12/2020 09:00:00 201212-45 23419848 TM048	21/12/2020	Marcin Magdziarek	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	2BSE-3 0.00 - 0.00 SOLID 10/12/2020 00:00:00 12/12/2020 09:00:00 201212-45 23419865 TM048	21/12/20	Andrzej Ferfecki	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	2BSE-5 0.00 - 0.00 SOLID 10/12/2020 00:00:00 12/12/2020 09:00:00 201212-45 23419881 TM048	21/12/2020	Agnieszka Chelmowska	Loose fibres in soil	Not Detected (#)	Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	2BSE-7 0.00 - 0.00 SOLID 11/12/2020 00:00:00 12/12/2020 09:00:00 201212-45 23419690 TM048	21/12/2020	Agnieszka Chelmowska	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	2BSE-9 0.00 - 0.00 SOLID 11/12/2020 00:00:00 12/12/2020 09:00:00 201212-45 23419701 TM048	21/12/20	Andrzej Ferfecki	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	2BSE-11 0.00 - 0.00 SOLID 11/12/2020 00:00:00 12/12/2020 09:00:00 201212-45 23419712 TM048	21/12/2020	Marcin Magdziarek	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	2BSE-13 0.00 - 0.00 SOLID 11/12/2020 00:00:00 12/12/2020 09:00:00 201212-45 23419728 TM048	21/12/20	Andrzej Ferfecki	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	2BSE-22 0.00 - 0.00 SOLID 11/12/2020 00:00:00 12/12/2020 09:00:00 201212-45 23419739 TM048	21/12/20	Andrzej Ferfecki	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected

CERTIFICATE OF ANALYSIS

SDG:	201212-45	**Client Reference:**	P18-669	**Report Number:**	583536
Location:	Llanwern	**Order Number:**		**Superseded Report:**	582539

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthophyllite	Fibrous Tremolite	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	2BSE-24 0.00 - 0.00 SOLID 11/12/2020 00:00:00 12/12/2020 09:00:00 201212-45 23419758 TM048	21/12/2020	Agnieszka Chelmowska	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	2BSE-26 0.00 - 0.00 SOLID 11/12/2020 00:00:00 12/12/2020 09:00:00 201212-45 23419769 TM048	21/12/20	Andrzej Ferfecki	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	2BSE-28 0.00 - 0.00 SOLID 11/12/2020 00:00:00 12/12/2020 09:00:00 201212-45 23419781 TM048	21/12/20	Andrzej Ferfecki	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	2BSE-30 0.00 - 0.00 SOLID 11/12/2020 00:00:00 12/12/2020 09:00:00 201212-45 23419792 TM048	21/12/20	Andrzej Ferfecki	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	2BSE-32 0.00 - 0.00 SOLID 11/12/2020 00:00:00 12/12/2020 09:00:00 201212-45 23419803 TM048	21/12/2020	Marcin Magdziarek	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	2BSE-34 0.00 - 0.00 SOLID 11/12/2020 00:00:00 12/12/2020 09:00:00 201212-45 23419826 TM048	21/12/20	Andrzej Ferfecki	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	M33-1 0.50 - 0.50 SOLID 10/12/2020 00:00:00 12/12/2020 09:00:00 201212-45 23419813 TM048	21/12/2020	Marcin Magdziarek	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	N33-1 0.30 - 0.30 SOLID 10/12/2020 00:00:00 12/12/2020 09:00:00 201212-45 23419678 TM048	21/12/2020	Marcin Magdziarek	Loose fibres in soil	Not Detected (#)	Not Detected (#)	Trace (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected

CERTIFICATE OF ANALYSIS

SDG:	201212-45	**Client Reference:**	P18-669	**Report Number:**	583536
Location:	Llanwern	**Order Number:**		**Superseded Report:**	582539

Asbestos Quantification - Full

Results Legend

#	ISO17025 accredited.
M	*m*CERTS accredited.
*	Subcontracted test.
(F)	Trigger breach confirmed
1-5&♦§@	Sample deviation (see appendix)

		Additional Asbestos Components	Analysts Comments	Asbestos Quantification - Gravimetric - %	Asbestos Quantification - PCOM	Asbestos Quantification - Total - %
Cust. Sample Ref.	2BSE-5	None (#)	N/A	<0.001 (#)	<0.001 (#)	<0.001 (#)
Depth (m)	0.00 - 0.00					
Sample Type	SOLID					
Date Sampled	10/12/2020 00:00:00					
Date Received	12/12/2020 09:00:00					
SDG	201212-45					
Original Sample	23419881					
Method Number	TM304					
Cust. Sample Ref.	N33-1	None (#)	N/A	<0.001 (#)	<0.001 (#)	<0.001 (#)
Depth (m)	0.30 - 0.30					
Sample Type	SOLID					
Date Sampled	10/12/2020 00:00:00					
Date Received	12/12/2020 09:00:00					
SDG	201212-45					
Original Sample	23419678					
Method Number	TM304					

Table of Results - Appendix

Method No	Reference	Description
PM024	Modified BS 1377	Soil preparation including homogenisation, moisture screens of soils for Asbestos Containing Material
SUB		Subcontracted Test
TM024	Method 4500A & B, AWWA/APHA, 20th Ed., 1999	Determination of Exchangeable Ammonium and Ammoniacal Nitrogen as N by titration on solids
TM048	HSG 248, Asbestos: The analysts' guide for sampling, analysis and clearance procedures	Identification of Asbestos in Bulk Material
TM062 (S)	National Grid Property Holdings Methods for the Collection & Analysis of Samples from National Grid Sites version 1 Sec 3.9	Determination of Phenols in Soils by HPLC
TM089	Modified: US EPA Methods 8020 & 602	Determination of Gasoline Range Hydrocarbons (GRO) by Headspace GC-FID (C4-C12)
TM116	Modified: US EPA Method 8260, 8120, 8020, 624, 610 & 602	Determination of Volatile Organic Compounds by Headspace / GC-MS
TM132	In - house Method	ELTRA CS800 Operators Guide
TM133	BS 1377: Part 3 1990;BS 6068-2.5	Determination of pH in Soil and Water using the GLpH pH Meter
TM153	Method 4500A,B,C, I, M AWWA/APHA, 20th Ed., 1999	Determination of Total Cyanide, Free (Easily Liberatable) Cyanide and Thiocyanate using the Skalar SANS+ System Segmented Flow Analyser
TM181	US EPA Method 6010B	Determination of Routine Metals in Soil by iCap 6500 Duo ICP-OES
TM218	Shaker extraction - EPA method 3546.	The determination of PAH in soil samples by GC-MS
TM304	HSE Contract research Report no 83/1996	Asbestos Quantification in Soil: Fibres identified by morphology only
TM414	Analysis of Petroleum Hydrocarbons in Environmental Media – Total Petroleum Hydrocarbon Criteria	Determination of Speciated Extractable Petroleum Hydrocarbons in Soils by GCxGC-FID

NA = not applicable.

Chemical testing (unless subcontracted) performed at ALS Life Sciences Ltd Hawarden (Method codes TM) or ALS Life Sciences Ltd Aberdeen (Method codes S).

CERTIFICATE OF ANALYSIS

SDG:	201212-45	**Client Reference:**	P18-669	**Report Number:**	583536
Location:	Llanwern	**Order Number:**		**Superseded Report:**	582539

Test Completion Dates

Lab Sample No(s)	23419848	23419856	23419865	23419873	23419881	23419682	23419690	23419695	23419701	23419706
Customer Sample Ref.	2BSE-1	2BSE-2	2BSE-3	2BSE-4	2BSE-5	2BSE-6	2BSE-7	2BSE-8	2BSE-9	2BSE-10
AGS Ref.										
Depth	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
Ammonium Soil by Titration	21-Dec-2020	21-Dec-2020	21-Dec-2020	21-Dec-2020	21-Dec-2020	21-Dec-2020	21-Dec-2020	21-Dec-2020	21-Dec-2020	21-Dec-2020
Asbestos ID in Solid Samples	21-Dec-2020		21-Dec-2020		21-Dec-2020		21-Dec-2020		21-Dec-2020	
Asbestos Quantification - Full					30-Dec-2020					
Calorific Value (S)*	30-Dec-2020	30-Dec-2020	30-Dec-2020	29-Dec-2020	30-Dec-2020	29-Dec-2020	29-Dec-2020	29-Dec-2020	29-Dec-2020	29-Dec-2020
Cyanide Comp/Free/Total/Thiocyanate	17-Dec-2020	17-Dec-2020	17-Dec-2020	17-Dec-2020	17-Dec-2020	17-Dec-2020	17-Dec-2020	17-Dec-2020	17-Dec-2020	17-Dec-2020
EPH CWG GC (S)	15-Jan-2021	08-Jan-2021	08-Jan-2021	08-Jan-2021	08-Jan-2021	13-Jan-2021	08-Jan-2021	14-Jan-2021	08-Jan-2021	15-Jan-2021
GRO by GC-FID (S)	11-Jan-2021	11-Jan-2021	11-Jan-2021	11-Jan-2021	11-Jan-2021	11-Jan-2021	19-Jan-2021	11-Jan-2021	19-Jan-2021	11-Jan-2021
Metals in solid samples by OES	21-Dec-2020	21-Dec-2020	21-Dec-2020	21-Dec-2020	18-Dec-2020	21-Dec-2020	21-Dec-2020	21-Dec-2020	21-Dec-2020	18-Dec-2020
PAH by GCMS	17-Dec-2020	17-Dec-2020	17-Dec-2020	17-Dec-2020	17-Dec-2020	17-Dec-2020	17-Dec-2020	17-Dec-2020	17-Dec-2020	17-Dec-2020
pH	18-Dec-2020	16-Dec-2020	18-Dec-2020	16-Dec-2020	18-Dec-2020	16-Dec-2020	16-Dec-2020	16-Dec-2020	16-Dec-2020	16-Dec-2020
Phenols by HPLC (S)	17-Dec-2020	20-Dec-2020	18-Dec-2020	18-Dec-2020	17-Dec-2020	18-Dec-2020	18-Dec-2020	17-Dec-2020	17-Dec-2020	18-Dec-2020
Sample description	14-Dec-2020	14-Dec-2020	14-Dec-2020	12-Dec-2020	14-Dec-2020	12-Dec-2020	12-Dec-2020	12-Dec-2020	12-Dec-2020	12-Dec-2020
Total Organic Carbon	21-Dec-2020	22-Dec-2020	21-Dec-2020	18-Dec-2020	21-Dec-2020	18-Dec-2020	21-Dec-2020	18-Dec-2020	21-Dec-2020	21-Dec-2020
TPH CWG GC (S)	15-Jan-2021	11-Jan-2021	11-Jan-2021	11-Jan-2021	11-Jan-2021	13-Jan-2021	19-Jan-2021	14-Jan-2021	19-Jan-2021	15-Jan-2021
VOC MS (S)	08-Jan-2021	08-Jan-2021	11-Jan-2021	08-Jan-2021	08-Jan-2021	08-Jan-2021	18-Jan-2021	08-Jan-2021	18-Jan-2021	11-Jan-2021

Lab Sample No(s)	23419712	23419718	23419728	23419733	23419739	23419751	23419758	23419763	23419769	23419775
Customer Sample Ref.	2BSE-11	2BSE-12	2BSE-13	2BSE-14	2BSE-22	2BSE-23	2BSE-24	2BSE-25	2BSE-26	2BSE-27
AGS Ref.										
Depth	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
Ammonium Soil by Titration	21-Dec-2020	21-Dec-2020	21-Dec-2020	21-Dec-2020	21-Dec-2020	21-Dec-2020	21-Dec-2020	21-Dec-2020	21-Dec-2020	21-Dec-2020
Asbestos ID in Solid Samples	21-Dec-2020		21-Dec-2020		21-Dec-2020		21-Dec-2020		21-Dec-2020	
Calorific Value (S)*	29-Dec-2020	30-Dec-2020	29-Dec-2020							
Cyanide Comp/Free/Total/Thiocyanate	17-Dec-2020	17-Dec-2020	17-Dec-2020	17-Dec-2020	17-Dec-2020	17-Dec-2020	16-Dec-2020	16-Dec-2020	17-Dec-2020	16-Dec-2020
EPH CWG GC (S)	08-Jan-2021	13-Jan-2021	14-Jan-2021	08-Jan-2021	13-Jan-2021	14-Jan-2021	13-Jan-2021	13-Jan-2021	13-Jan-2021	11-Jan-2021
GRO by GC-FID (S)	11-Jan-2021	11-Jan-2021	11-Jan-2021	11-Jan-2021	11-Jan-2021	11-Jan-2021	11-Jan-2021	11-Jan-2021	11-Jan-2021	11-Jan-2021
Metals in solid samples by OES	21-Dec-2020	17-Dec-2020	21-Dec-2020	21-Dec-2020	18-Dec-2020	21-Dec-2020	18-Dec-2020	21-Dec-2020	17-Dec-2020	21-Dec-2020
PAH by GCMS	17-Dec-2020	17-Dec-2020	17-Dec-2020	17-Dec-2020	17-Dec-2020	17-Dec-2020	17-Dec-2020	17-Dec-2020	17-Dec-2020	17-Dec-2020
pH	16-Dec-2020	16-Dec-2020	16-Dec-2020	16-Dec-2020	16-Dec-2020	16-Dec-2020	18-Dec-2020	16-Dec-2020	16-Dec-2020	16-Dec-2020
Phenols by HPLC (S)	17-Dec-2020	17-Dec-2020	17-Dec-2020	17-Dec-2020	18-Dec-2020	18-Dec-2020	17-Dec-2020	17-Dec-2020	17-Dec-2020	18-Dec-2020
Sample description	12-Dec-2020	12-Dec-2020	12-Dec-2020	12-Dec-2020	14-Dec-2020	14-Dec-2020	14-Dec-2020	14-Dec-2020	14-Dec-2020	14-Dec-2020
Total Organic Carbon	22-Dec-2020	18-Dec-2020	21-Dec-2020	22-Dec-2020	18-Dec-2020	21-Dec-2020	21-Dec-2020	21-Dec-2020	21-Dec-2020	18-Dec-2020
TPH CWG GC (S)	11-Jan-2021	13-Jan-2021	14-Jan-2021	11-Jan-2021	13-Jan-2021	14-Jan-2021	13-Jan-2021	13-Jan-2021	13-Jan-2021	11-Jan-2021
VOC MS (S)	11-Jan-2021	08-Jan-2021	08-Jan-2021	08-Jan-2021	08-Jan-2021	08-Jan-2021	08-Jan-2021	08-Jan-2021	08-Jan-2021	08-Jan-2021

Lab Sample No(s)	23419781	23419786	23419792	23419798	23419803	23419821	23419826	23419833	23419813	23419841
Customer Sample Ref.	2BSE-28	2BSE-29	2BSE-30	2BSE-31	2BSE-32	2BSE-33	2BSE-34	2BSE-35	M33-1	M33-2
AGS Ref.										
Depth	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.50 - 0.50	1.40 - 1.40
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
Ammonium Soil by Titration	21-Dec-2020	21-Dec-2020	21-Dec-2020	21-Dec-2020	21-Dec-2020	21-Dec-2020	21-Dec-2020	21-Dec-2020	21-Dec-2020	21-Dec-2020
Asbestos ID in Solid Samples	21-Dec-2020		21-Dec-2020		21-Dec-2020		21-Dec-2020		21-Dec-2020	
Cyanide Comp/Free/Total/Thiocyanate	17-Dec-2020	16-Dec-2020	16-Dec-2020	16-Dec-2020	16-Dec-2020	16-Dec-2020	17-Dec-2020	17-Dec-2020	17-Dec-2020	17-Dec-2020
EPH CWG GC (S)	13-Jan-2021	08-Jan-2021	08-Jan-2021	08-Jan-2021	13-Jan-2021	08-Jan-2021	13-Jan-2021	14-Jan-2021	08-Jan-2021	08-Jan-2021
GRO by GC-FID (S)	11-Jan-2021	11-Jan-2021	11-Jan-2021	11-Jan-2021	11-Jan-2021	11-Jan-2021	11-Jan-2021	11-Jan-2021	07-Jan-2021	07-Jan-2021
Metals in solid samples by OES	18-Dec-2020	21-Dec-2020	18-Dec-2020	18-Dec-2020	18-Dec-2020	21-Dec-2020	21-Dec-2020	21-Dec-2020	18-Dec-2020	21-Dec-2020
PAH by GCMS	17-Dec-2020	17-Dec-2020	17-Dec-2020	21-Dec-2020	17-Dec-2020	17-Dec-2020	17-Dec-2020	17-Dec-2020	17-Dec-2020	17-Dec-2020
pH	18-Dec-2020	16-Dec-2020	18-Dec-2020	16-Dec-2020	18-Dec-2020	16-Dec-2020	16-Dec-2020	16-Dec-2020	18-Dec-2020	16-Dec-2020
Phenols by HPLC (S)	18-Dec-2020	17-Dec-2020	18-Dec-2020	18-Dec-2020	18-Dec-2020	17-Dec-2020	18-Dec-2020	17-Dec-2020	17-Dec-2020	17-Dec-2020
Sample description	14-Dec-2020	14-Dec-2020	14-Dec-2020	14-Dec-2020	14-Dec-2020	14-Dec-2020	12-Dec-2020	12-Dec-2020	14-Dec-2020	14-Dec-2020
Total Organic Carbon	21-Dec-2020	18-Dec-2020	21-Dec-2020	21-Dec-2020	18-Dec-2020	18-Dec-2020	22-Dec-2020	18-Dec-2020	21-Dec-2020	21-Dec-2020
TPH CWG GC (S)	13-Jan-2021	11-Jan-2021	11-Jan-2021	11-Jan-2021	13-Jan-2021	11-Jan-2021	13-Jan-2021	14-Jan-2021	08-Jan-2021	08-Jan-2021
VOC MS (S)	08-Jan-2021	11-Jan-2021	11-Jan-2021	08-Jan-2021	08-Jan-2021	08-Jan-2021	08-Jan-2021	08-Jan-2021	08-Jan-2021	08-Jan-2021

Validated

CERTIFICATE OF ANALYSIS

SDG:	201212-45	**Client Reference:**	P18-669	**Report Number:**	583536
Location:	Llanwern	**Order Number:**		**Superseded Report:**	582539

Lab Sample No(s)	23419678	23419744
Customer Sample Ref.	N33-1	N33-2
AGS Ref.		
Depth	0.30 - 0.30	1.60 - 1.60
Type	Soil/Solid (S)	Soil/Solid (S)
Ammonium Soil by Titration	21-Dec-2020	18-Dec-2020
Asbestos ID in Solid Samples	21-Dec-2020	
Asbestos Quantification - Full	30-Dec-2020	
Cyanide Comp/Free/Total/Thiocyanate	17-Dec-2020	16-Dec-2020
EPH CWG GC (S)	08-Jan-2021	13-Jan-2021
GRO by GC-FID (S)	07-Jan-2021	07-Jan-2021
Metals in solid samples by OES	21-Dec-2020	18-Dec-2020
PAH by GCMS	17-Dec-2020	17-Dec-2020
pH	16-Dec-2020	16-Dec-2020
Phenols by HPLC (S)	18-Dec-2020	17-Dec-2020
Sample description	14-Dec-2020	14-Dec-2020
Total Organic Carbon	21-Dec-2020	21-Dec-2020
TPH CWG GC (S)	08-Jan-2021	13-Jan-2021
VOC MS (S)	06-Jan-2021	06-Jan-2021

CERTIFICATE OF ANALYSIS

Work Order	: **PR20C4943**	Issue Date	: 30-Dec-2020
Customer	: **ALS Life Sciences Ltd**	Laboratory	: ALS Czech Republic, s.r.o.
Contact	: ALS Hawarden Reporting	Contact	: Client Service
Address	: Unit 7-8 Hawarden Business Park Manor Road, Hawarden CH5 3US Deeside United Kingdom	Address	: Na Harfe 336/9 Prague 9 - Vysocany 190 00 Czech Republic
E-mail	: euhdnsubconresults@ALSGlobal.com	E-mail	: customer.support@alsglobal.com
Telephone	: ----	Telephone	: +420 226 226 228
Project	: 201212-45	Page	: 1 of 3
Order number	: ----	Date Samples Received	: 15-Dec-2020
		Quote number	: PR2018ALSAL-GB0004 (CZ-256-18-0022)
Site	: ----	Date of test	: 16-Dec-2020 - 30-Dec-2020
Sampled by	: client	QC Level	: ALS CR Standard Quality Control Schedule

General Comments

This report shall not be reproduced except in full, without prior written approval from the laboratory.

The laboratory declares that the test results relate only to the listed samples. If the section "Sampled by" of the Certificate of analysis states: "Sampled by Customer" then the results relate to the sample as received.

Responsible for accuracy

Testing Laboratory No. 1163
Accredited by CAI according to
CSN EN ISO/IEC 17025:2018

Signatories		*Position*
Zdeněk Jirák		Environmental Business Unit Manager

The company is certified according to ČSN EN ISO 14001 (Environmental management systems) and ČSN ISO 45001 (Occupational health and safety management systems)

Analytical Results

Sub-Matrix: SOIL	Client sample ID	23426503 2BSE-1		23426518 2BSE-12		23426480 2BSE-2	
	Laboratory sample ID	PR20C4943-001		PR20C4943-002		PR20C4943-003	
	Client sampling date / time	14-Dec-2020 07:35		14-Dec-2020 07:37		14-Dec-2020 07:29	

Parameter	Method	LOR	Unit	Result	MU	Result	MU	Result	MU
Physical Parameters									
Gross Calorific Value in Dry Matter Q(V/gr/d)	I-CV-CALS	0.50	MJ/kg DW	**5.04**	± 12.0%	**7.47**	± 11.0%	**5.93**	± 11.5%
Gross Calorific Value Original Q(V/gr/ar)	I-CV-CALS	0.50	MJ/kg	**4.41**	± 12.5%	**6.62**	± 11.2%	**5.32**	± 11.8%
Net Calorific Value in Dry Matter Q(V/net/d)	I-CV-CALS	0.50	MJ/kg DW	**4.68**	± 12.3%	**7.11**	± 11.0%	**5.62**	± 11.6%
Net Calorific Value Original Q(V/net/ar)	I-CV-CALS	0.50	MJ/kg	**3.80**	± 13.3%	**6.04**	± 11.4%	**4.81**	± 12.2%
Water Analytical M(ad)	I-WA-GR	0.50	%	**1.58**	± 29.1%	**1.11**	± 36.0%	**0.95**	± 40.4%
Water Gross M(ex)	I-WG-GR	0.50	%	**11.1**	± 20.2%	**10.4**	± 20.2%	**9.39**	± 20.3%
Water Total M(ar)	I-WT-CC	0.50	%	**12.5**	----	**11.4**	----	**10.2**	----

Sub-Matrix: SOIL	Client sample ID	23426494 2BSE-3		23426485 2BSE-5		----	
	Laboratory sample ID	PR20C4943-004		PR20C4943-005		----	
	Client sampling date / time	14-Dec-2020 07:33		14-Dec-2020 07:31		----	

Parameter	Method	LOR	Unit	Result	MU	Result	MU	Result	MU
Physical Parameters									
Gross Calorific Value in Dry Matter Q(V/gr/d)	I-CV-CALS	0.50	MJ/kg DW	**4.17**	± 12.8%	**1.06**	± 33.0%	**----**	----
Gross Calorific Value Original Q(V/gr/ar)	I-CV-CALS	0.50	MJ/kg	**3.56**	± 13.7%	**0.95**	± 36.4%	**----**	----
Net Calorific Value in Dry Matter Q(V/net/d)	I-CV-CALS	0.50	MJ/kg DW	**3.81**	± 13.3%	**0.78**	± 43.8%	**----**	----
Net Calorific Value Original Q(V/net/ar)	I-CV-CALS	0.50	MJ/kg	**2.91**	± 15.2%	<0.50	----	**----**	----
Water Analytical M(ad)	I-WA-GR	0.50	%	**0.92**	± 41.3%	**1.38**	± 31.4%	**----**	----
Water Gross M(ex)	I-WG-GR	0.50	%	**13.9**	± 20.1%	**8.35**	± 20.4%	**----**	----
Water Total M(ar)	I-WT-CC	0.50	%	**14.7**	----	**9.61**	----	**----**	----

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes. Measurement uncertainty is expressed as expanded measurement uncertainty with coverage factor k = 2, representing 95% confidence level.
Key: LOR = Limit of reporting; MU = Measurement Uncertainty. The MU does not include sampling uncertainty.

The end of result part of the certificate of analysis

Brief Method Summaries

Analytical Methods	Method Descriptions
Location of test performance: Bendlova 1687/7 Ceska Lipa Czech Republic 470 01	
I-CV-CALS	CZ_SOP_D06_07_124.A (CSN ISO 1928, CSN EN ISO 18125, CSN EN 15400, CSN EN 15170, CSN DIN 51900-1, CSN DIN 51900-2, CSN DIN 51900-3, CSN P CEN/TS 16023) Determination of gross calorific value by calorimetric method and calculation of net calorific value and emission factor by calculation from measured values.
I-WA-GR	CZ_SOP_D06_07_041 (CSN 44 1377, CSN EN ISO 18134-1, CSN EN ISO 18134-2, CSN EN ISO 18134-3, CSN P CEN/TS 15414-1, CSN P CEN/TS 15414-2, CSN EN 15414-3, CSN EN12880, CSN EN14346, CSN EN 15002) Determination of analytical water and gross water by gravimetry and determination of total water by calculation from measured values.
I-WG-GR	CZ_SOP_D06_07_041 (CSN 44 1377, CSN EN ISO 18134-1, CSN EN ISO 18134-2, CSN EN ISO 18134-3, CSN P CEN/TS 15414-1, CSN P CEN/TS 15414-2, CSN EN 15414-3, CSN EN12880, CSN EN14346, CSN EN 15002) Determination of analytical water and gross water by gravimetry and determination of total water by calculation from measured values.
I-WT-CC	CZ_SOP_D06_07_041 (CSN 44 1377, CSN EN ISO 18134-1, CSN EN ISO 18134-2, CSN EN ISO 18134-3, CSN P CEN/TS 15414-1, CSN P CEN/TS 15414-2, CSN EN 15414-3, CSN EN12880, CSN EN14346, CSN EN 15002) Determination of analytical water and gross water by gravimetry and determination of total water by calculation from measured values.

Preparation Methods	Method Descriptions

Preparation Methods	*Method Descriptions*
Location of test performance: Bendlova 1687/7 Ceska Lipa Czech Republic 470 01	
I-PPBURN	Sample combustion in a calorimetric bomb for fuel tests
* S-PPHOM.07	CZ_SOP_D06_07_P01 Preparation of solid samples for analysis (crushing, milling and pulverizing).
* S-PPHOM0.3	CZ_SOP_D06_07_P01 Preparation of solid samples for analysis (crushing, milling and pulverizing).

A `*` symbol preceding any method indicates laboratory or subcontractor non-accredited test. In the case when a procedure belonging to an accredited method was used for non-accredited matrix, would apply that the reported results are non-accredited. Please refer to General Comment section on front page for information. If the report contains subcontracted analysis, those are made in a subcontracted laboratory outside the laboratories ALS Czech Republic, s.r.o.
The calculation methods of summation parameters are available on request in the client service.

Appendix

General

1. Results are expressed on a dry weight basis (dried at 35ºC) for all soil analyses except for the following: NRA and CEN Leach tests, flash point LOI, pH, ammonium as NH4 by the BRE method, VOC TICs and SVOC TICs.

2. If sufficient sample is received a sub sample will be retained free of charge for 30 days after analysis is completed (e-mailed) for all sample types unless the sample is destroyed on testing. The prepared soil sub sample that is analysed for asbestos will be retained for a period of 6 months after the analysis date. All bulk samples will be retained for a period of 6 months after the analysis date. All samples received and not scheduled will be disposed of one month after the date of receipt unless we are instructed to the contrary. Once the initial period has expired, a storage charge will be applied for each month or part thereof until the client cancels the request for sample storage. ALS reserve the right to charge for samples received and stored but not analysed.

3. With respect to turnaround, we will always endeavour to meet client requirements wherever possible, but turnaround times cannot be absolutely guaranteed due to so many variables beyond our control.

4. We take responsibility for any test performed by sub-contractors (marked with an asterisk). We endeavour to use UKAS/MCERTS Accredited Laboratories, who either complete a quality questionnaire or are audited by ourselves. For some determinands there are no UKAS/MCERTS Accredited Laboratories, in this instance a laboratory with a known track record will be utilised.

5. If no separate volatile sample is supplied by the client, or if a headspace or sediment is present in the volatile sample, the integrity of the data may be compromised. This will be flagged up as an invalid VOC on the test schedule and the result marked as deviating on the test certificate.

6. NDP - No determination possible due to insufficient/unsuitable sample.

7. Results relate only to the items tested.

8. LoDs (Limit of Detection) for wet tests reported on a dry weight basis are not corrected for moisture content.

9. **Surrogate recoveries** - Surrogates are added to your sample to monitor recovery of the test requested. A % recovery is reported, results are not corrected for the recovery measured. Typical recoveries for organics tests are 70-130%. Recoveries in soils are affected by organic rich or clay rich matrices. Waters can be affected by remediation fluids or high amounts of sediment. Test results are only ever reported if all of the associated quality checks pass; it is assumed that all recoveries outside of the values above are due to matrix affect.

10. Stones/debris are not routinely removed. We always endeavour to take a representative sub sample from the received sample.

11. In certain circumstances the method detection limit may be elevated due to the sample being outside the calibration range. Other factors that may contribute to this include possible interferences. In both cases the sample would be diluted which would cause the method detection limit to be raised.

12. Mercury results quoted on soils will not include volatile mercury as the analysis is performed on a dried and crushed sample.

13. For leachate preparations other than Zero Headspace Extraction (ZHE) volatile loss may occur.

14. For the BSEN 12457-3 two batch process to allow the cumulative release to be calculated, the volume of the leachate produced is measured and filtered for all tests. We therefore cannot carry out any unfiltered analysis. The tests affected include volatiles GCFID/GCMS and all subcontracted analysis.

15. Analysis and identification of specific compounds using GCFID is by retention time only, and we routinely calibrate and quantify for benzene, toluene, ethylbenzenes and xylenes (BTEX). For total volatiles in the C5-C12 range, the total area of the chromatogram is integrated and expressed as ug/kg or ug/l. Although this analysis is commonly used for the quantification of gasoline range organics (GRO), the system will also detect other compounds such as chlorinated solvents, and this may lead to a falsely high result with respect to hydrocarbons only. It is not possible to specifically identify these non-hydrocarbons, as standards are not routinely run for any other compounds, and for more definitive identification, volatiles by GCMS should be utilised.

16. We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample. Other coarse granular material such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

17. **Tentatively Identified Compounds (TICs)** are non-target peaks in VOC and SVOC analysis. All non-target peaks detected with a concentration above the LoD are subjected to a mass spectral library search. Non-target peaks with a library search confidence of >75% are reported based on the best mass spectral library match. When a non-target peak with a library search confidence of <75% is detected it is reported as "mixed hydrocarbons". Non-target compounds identified from the scan data are semi-quantified relative to one of the deuterated internal standards, under the same chromatographic conditions as the target compounds. This result is reported as a semi-quantitative value and reported as Tentatively Identified Compounds (TICs). TICs are outside the scope of UKAS accreditation and are not moisture corrected.

18. **Sample Deviations**

If a sample is classed as deviated then the associated results may be compromised.

1	**Container with Headspace provided for volatiles analysis**
2	**Incorrect container received**
3	**Deviation from method**
4	**Matrix interference**
♦	**Sample holding time exceeded in laboratory**
@	**Sample holding time exceeded due to late arrival of instructions or samples**
§	**Sampled on date not provided**

19. **Asbestos**

When requested, the individual sub sample scheduled will be analysed in house for the presence of asbestos fibres and asbestos containing material by our documented in house method TM048 based on HSG 248 (2005), which is accredited to ISO17025. If a specific asbestos fibre type is not found this will be reported as "Not detected". If no asbestos fibre types are found all will be reported as "Not detected" and the sub sample analysed deemed to be clear of asbestos. If an asbestos fibre type is found it will be reported as detected (for each fibre type found). Testing can be carried out on asbestos positive samples, but, due to Health and Safety considerations, may be replaced by alternative tests or reported as No Determination Possible (NDP). The quantity of asbestos present is not determined unless specifically requested.

Identification of Asbestos in Bulk Materials & Soils

The results for identification of asbestos in bulk materials are obtained from supplied bulk materials which have been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

The results for identification of asbestos in soils are obtained from a homogenised sub sample which has been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

Asbestos Type	Common Name
Chrysotile	White Asbestos
Amosite	Brown Asbestos
Crocidolite	Blue Asbestos
Fibrous Actinolite	-
Fibrous Anthophyllite	-
Fibrous Tremolite	-

Visual Estimation Of Fibre Content

Estimation of fibre content is not permitted as part of our UKAS accredited test other than: - Trace - Where only one or two asbestos fibres were identified.

Respirable Fibres

Respirable fibres are defined as fibres of <3 µm diameter, longer than 5 µm and with aspect ratios of at least 3:1 that can be inhaled into the lower regions of the lung and are generally acknowledged to be most important predictor of hazard and risk for cancers of the lung.
Standing Committee of Analysts, *The Quantification of Asbestos in Soil (2017).*

Further guidance on typical asbestos fibre content of manufactured products can be found in HSG 264.

The identification of asbestos containing materials and soils falls within our schedule of tests for which we hold UKAS accreditation, however opinions, interpretations and all other information contained in the report are outside the scope of UKAS accreditation.

Unit 7-8 Hawarden Business Park
Manor Road (off Manor Lane)
Hawarden
Deeside
CH5 3US
Tel: (01244) 528700
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Website: www.alsenvironmental.co.uk

Rodgers Leask
Office 225
2430/2440
Aztec West
Almondsbury
Bristol
BS32 4QA

Attention: Elliot Thomas

CERTIFICATE OF ANALYSIS

Date of report Generation:	19 January 2021
Customer:	Rodgers Leask
Sample Delivery Group (SDG):	201215-62
Your Reference:	P18-669
Location:	Llanwern
Report No:	583598

This report has been revised and directly supersedes 583597 in its entirety.

We received 48 samples on Tuesday December 15, 2020 and 48 of these samples were scheduled for analysis which was completed on Tuesday January 19, 2021. Accredited laboratory tests are defined within the report, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation.

Should this report require incorporation into client reports, it must be used in its entirety and not simply with the data sections alone.

Chemical testing (unless subcontracted) performed at ALS Life Sciences Ltd Hawarden (Method codes TM) or ALS Life Sciences Ltd Aberdeen (Method codes S).

All sample data is provided by the customer. The reported results relate to the sample supplied, and on the basis that this data is correct.
Incorrect sampling dates and/or sample information will affect the validity of results.
The customer is not permitted to reproduce this report except in full without the approval of the laboratory.

Approved By:

Sonia McWhan

Operations Manager

CERTIFICATE OF ANALYSIS

SDG:	201215-62	**Client Reference:**	P18-669	**Report Number:**	583598
Location:	Llanwern	**Order Number:**		**Superseded Report:**	583597

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
23432757	2BN-1		0.00 - 0.00	14/12/2020
23432763	2BN-2		0.00 - 0.00	14/12/2020
23432768	2BN-3		0.00 - 0.00	14/12/2020
23432776	2BN-4		0.00 - 0.00	14/12/2020
23432780	2BN-5		0.00 - 0.00	14/12/2020
23432790	2BN-6		0.00 - 0.00	14/12/2020
23432795	2BN-7		0.00 - 0.00	14/12/2020
23432801	2BN-8		0.00 - 0.00	14/12/2020
23432805	2BN-9		0.00 - 0.00	14/12/2020
23432810	2BN-10		0.00 - 0.00	14/12/2020
23432817	2BN2-1		0.00 - 0.00	14/12/2020
23432823	2BN2-2		0.00 - 0.00	14/12/2020
23432829	2BN2-3		0.00 - 0.00	14/12/2020
23432837	2BN2-4		0.00 - 0.00	14/12/2020
23432845	2BN2-5		0.00 - 0.00	14/12/2020
23432860	2BN2-6		0.00 - 0.00	14/12/2020
23432866	2BN2-7		0.00 - 0.00	14/12/2020
23432871	2BN2-12		0.00 - 0.00	14/12/2020
23432875	2BN2-13		0.00 - 0.00	14/12/2020
23432880	2BN2-14		0.00 - 0.00	14/12/2020
23432885	2BN2-15		0.00 - 0.00	14/12/2020
23432889	2BN2-16		0.00 - 0.00	14/12/2020
23432897	2BN2-17		0.00 - 0.00	14/12/2020
23432910	2BN2-18		0.00 - 0.00	14/12/2020
23432918	2BN2-19		0.00 - 0.00	14/12/2020
23432941	2BN2-20		0.00 - 0.00	14/12/2020
23432949	2BN2-21		0.00 - 0.00	14/12/2020
23432955	2BN2-22		0.00 - 0.00	14/12/2020
23432959	2BN2-23		0.00 - 0.00	14/12/2020
23432963	2BN2-24		0.00 - 0.00	14/12/2020
23432967	2BN2-25		0.00 - 0.00	14/12/2020
23432973	2BN2-26		0.00 - 0.00	14/12/2020
23432977	2BN2-27		0.00 - 0.00	14/12/2020
23432981	2BN2-28		0.00 - 0.00	14/12/2020
23432722	2BSE-15		0.00 - 0.00	11/12/2020
23432786	2BSE-16		0.00 - 0.00	11/12/2020
23432853	2BSE-17		0.00 - 0.00	11/12/2020
23432930	2BSE-18		0.00 - 0.00	11/12/2020
23432986	2BSE-19		0.00 - 0.00	11/12/2020
23432990	2BSE-20		0.00 - 0.00	11/12/2020
23432994	2BSE-21		0.00 - 0.00	11/12/2020
23433001	2BSE-36		0.00 - 0.00	11/12/2020
23433006	2BSE-37		0.00 - 0.00	11/12/2020
23432728	2BSE-38		0.00 - 0.00	11/12/2020
23432735	2BSE-39		0.00 - 0.00	11/12/2020
23432740	2BSE-40		0.00 - 0.00	11/12/2020
23432745	2BSE-41		0.00 - 0.00	11/12/2020
23432753	2BSE-42		0.00 - 0.00	11/12/2020

Only received samples which have had analysis scheduled will be shown on the following pages.

CERTIFICATE OF ANALYSIS

SDG:	201215-62	**Client Reference:**	P18-669	**Report Number:**	583598
Location:	Llanwern	**Order Number:**		**Superseded Report:**	583597

Results Legend

X Test

N No Determination Possible

Sample Types -

S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

Lab Sample No(s)			23432757		23432763		23432768		23432776		23432780		23432790		23432795		23432801				
Customer Sample Reference			2BN-1		2BN-2		2BN-3		2BN-4		2BN-5		2BN-6		2BN-7		2BN-8				
AGS Reference																					
Depth (m)			0.00 - 0.00		0.00 - 0.00		0.00 - 0.00		0.00 - 0.00		0.00 - 0.00		0.00 - 0.00		0.00 - 0.00		0.00 - 0.00				
Container			1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)
Sample Type			S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
Ammonium Soil by Titration	All	NDPs: 0 Tests: 48		X		X			X		X			X		X			X		X
Asbestos ID in Solid Samples	All	NDPs: 0 Tests: 24	X					X					X					X			
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 48		X		X			X		X			X		X			X		X
EPH CWG GC (S)	All	NDPs: 0 Tests: 48		X		X			X		X			X		X			X		X
GRO by GC-FID (S)	All	NDPs: 0 Tests: 48			X		X			X		X			X		X			X	
Metals in solid samples by OES	All	NDPs: 0 Tests: 48		X		X			X		X			X		X			X		X
PAH by GCMS	All	NDPs: 0 Tests: 48		X		X			X		X			X		X			X		X
pH	All	NDPs: 0 Tests: 48		X		X			X		X			X		X			X		X
Phenols by HPLC (S)	All	NDPs: 0 Tests: 48		X		X			X		X			X		X			X		X
Sample description	All	NDPs: 0 Tests: 48		X		X			X		X			X		X			X		X
Total Organic Carbon	All	NDPs: 0 Tests: 48		X		X			X		X			X		X			X		X
TPH CWG GC (S)	All	NDPs: 0 Tests: 48		X		X			X		X			X		X			X		X
VOC MS (S)	All	NDPs: 0 Tests: 51		X	X		X			X		X	X	X	X				X		

23432860	2BN2-6		0.00 - 0.00	60g VOC (ALE215)	S					X								X
				250g Amber Jar (ALE210)	S	X		X	X		X	X	X	X	X	X	X	
23432845	2BN2-5		0.00 - 0.00	60g VOC (ALE215)	S					X								X
				250g Amber Jar (ALE210)	S	X		X	X		X	X	X	X	X	X	X	
				1kg TUB with Handle (ALE260)	S		X											
23432837	2BN2-4		0.00 - 0.00	60g VOC (ALE215)	S					X								X
				250g Amber Jar (ALE210)	S	X		X	X		X	X	X	X	X	X	X	
23432829	2BN2-3		0.00 - 0.00	60g VOC (ALE215)	S					X								X
				250g Amber Jar (ALE210)	S	X		X	X		X	X	X	X	X	X	X	
				1kg TUB with Handle (ALE260)	S		X											
23432823	2BN2-2		0.00 - 0.00	60g VOC (ALE215)	S					X								X
				250g Amber Jar (ALE210)	S	X		X	X		X	X	X	X	X	X	X	
23432817	2BN2-1		0.00 - 0.00	60g VOC (ALE215)	S					X								X
				250g Amber Jar (ALE210)	S	X		X	X		X	X	X	X	X	X	X	
				1kg TUB with Handle (ALE260)	S		X											
23432810	2BN-10		0.00 - 0.00	60g VOC (ALE215)	S					X								X
				250g Amber Jar (ALE210)	S	X		X	X		X	X	X	X	X	X	X	
23432805	2BN-9		0.00 - 0.00	60g VOC (ALE215)	S					X								X
				250g Amber Jar (ALE210)	S	X		X	X		X	X	X	X	X	X	X	
				1kg TUB with Handle (ALE260)	S		X											
23432801	2BN-8		0.00 - 0.00	60g VOC (ALE215)	S					X								X

Validated

CERTIFICATE OF ANALYSIS

SDG:	201215-62	**Client Reference:**	P18-669	**Report Number:**	583598
Location:	Llanwern	**Order Number:**		**Superseded Report:**	583597

Results Legend

X Test

N No Determination Possible

Sample Types -

S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

Lab Sample No(s)			23432866	23432871	23432875	23432880	23432885	23432889	23432897	23432910											
Customer Sample Reference			2BN2-7	2BN2-12	2BN2-13	2BN2-14	2BN2-15	2BN2-16	2BN2-17	2BN2-18											
AGS Reference																					
Depth (m)			0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00											
Container			1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)
Sample Type			S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
Ammonium Soil by Titration	All	NDPs: 0 Tests: 48		X		X			X		X			X		X			X		X
Asbestos ID in Solid Samples	All	NDPs: 0 Tests: 24	X					X					X					X			
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 48		X		X			X		X			X		X			X		X
EPH CWG GC (S)	All	NDPs: 0 Tests: 48		X		X			X		X			X		X			X		X
GRO by GC-FID (S)	All	NDPs: 0 Tests: 48			X		X			X		X			X		X			X	
Metals in solid samples by OES	All	NDPs: 0 Tests: 48		X		X			X		X			X		X			X		X
PAH by GCMS	All	NDPs: 0 Tests: 48		X		X			X		X			X		X			X		X
pH	All	NDPs: 0 Tests: 48		X		X			X		X			X		X			X		X
Phenols by HPLC (S)	All	NDPs: 0 Tests: 48		X		X			X		X			X		X			X		X
Sample description	All	NDPs: 0 Tests: 48		X		X			X		X			X		X			X		X
Total Organic Carbon	All	NDPs: 0 Tests: 48		X		X			X		X			X		X			X		X
TPH CWG GC (S)	All	NDPs: 0 Tests: 48		X		X			X		X			X		X			X		X
VOC MS (S)	All	NDPs: 0 Tests: 51			X		X			X		X			X		X			X	

23432973	2BN2-26		0.00 - 0.00	60g VOC (ALE215)	S
				250g Amber Jar (ALE210)	S
23432967	2BN2-25		0.00 - 0.00	60g VOC (ALE215)	S
				250g Amber Jar (ALE210)	S
				1kg TUB with Handle (ALE260)	S
23432963	2BN2-24		0.00 - 0.00	60g VOC (ALE215)	S
				250g Amber Jar (ALE210)	S
23432959	2BN2-23		0.00 - 0.00	60g VOC (ALE215)	S
				250g Amber Jar (ALE210)	S
				1kg TUB with Handle (ALE260)	S
23432955	2BN2-22		0.00 - 0.00	60g VOC (ALE215)	S
				250g Amber Jar (ALE210)	S
23432949	2BN2-21		0.00 - 0.00	60g VOC (ALE215)	S
				250g Amber Jar (ALE210)	S
				1kg TUB with Handle (ALE260)	S
23432941	2BN2-20		0.00 - 0.00	60g VOC (ALE215)	S
				250g Amber Jar (ALE210)	S
23432918	2BN2-19		0.00 - 0.00	60g VOC (ALE215)	S
				250g Amber Jar (ALE210)	S
				1kg TUB with Handle (ALE260)	S
23432910	2BN2-18		0.00 - 0.00	60g VOC (ALE215)	S

Validated

CERTIFICATE OF ANALYSIS

SDG:	201215-62	**Client Reference:**	P18-669	**Report Number:**	583598
Location:	Llanwern	**Order Number:**		**Superseded Report:**	583597

Results Legend

X Test

N No Determination Possible

Sample Types -

S - Soil/Solid
UNS - Unspecified Solid
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G - Gas
OTH - Other

Lab Sample No(s)			23432977	23432981		23432722			23432786		23432853			23432930			23432986			
Customer Sample Reference			2BN2-27	2BN2-28		2BSE-15			2BSE-16		2BSE-17			2BSE-18			2BSE-19			
AGS Reference																				
Depth (m)			0.00 - 0.00	0.00 - 0.00		0.00 - 0.00			0.00 - 0.00		0.00 - 0.00			0.00 - 0.00			0.00 - 0.00			
Container			1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)	60g VOC (ALE215)
Sample Type			S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
Ammonium Soil by Titration	All	NDPs: 0 Tests: 48		X		X			X		X			X			X			X	
Asbestos ID in Solid Samples	All	NDPs: 0 Tests: 24	X					X					X						X		
Calorific Value (S)*	All	NDPs: 0 Tests: 7							X		X			X			X			X	
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 48		X		X			X		X			X			X			X	
EPH CWG GC (S)	All	NDPs: 0 Tests: 48		X		X		X			X		X			X				X	
GRO by GC-FID (S)	All	NDPs: 0 Tests: 48			X		X			X		X			X			X			X
Metals in solid samples by OES	All	NDPs: 0 Tests: 48		X		X			X		X			X			X			X	
PAH by GCMS	All	NDPs: 0 Tests: 48		X		X			X		X			X			X			X	
pH	All	NDPs: 0 Tests: 48		X		X			X		X			X			X			X	
Phenols by HPLC (S)	All	NDPs: 0 Tests: 48		X		X			X		X			X			X			X	
Sample description	All	NDPs: 0 Tests: 48		X		X			X		X			X			X			X	
Total Organic Carbon	All	NDPs: 0 Tests: 48		X		X			X		X			X			X			X	
TPH CWG GC (S)	All	NDPs: 0 Tests: 48		X		X		X			X		X			X				X	
VOC MS (S)	All	NDPs: 0 Tests: 51			X		X			X		X			X			X			X

23432753	2BSE-42		0.00 - 0.00	250g Amber Jar (ALE210)	S	X			X	X		X	X	X	X	X	X	X	
23432745	2BSE-41		0.00 - 0.00	60g VOC (ALE215)	S						X								X
				250g Amber Jar (ALE210)	S	X			X	X		X	X	X	X	X	X	X	
				1kg TUB with Handle (ALE260)	S		X												
23432740	2BSE-40		0.00 - 0.00	60g VOC (ALE215)	S						X								X
				250g Amber Jar (ALE210)	S	X			X	X		X	X	X	X	X	X	X	
23432735	2BSE-39		0.00 - 0.00	60g VOC (ALE215)	S						X								X
				250g Amber Jar (ALE210)	S	X			X	X		X	X	X	X	X	X	X	
				1kg TUB with Handle (ALE260)	S		X												
23432728	2BSE-38		0.00 - 0.00	60g VOC (ALE215)	S						X								X
				250g Amber Jar (ALE210)	S	X			X	X		X	X	X	X	X	X	X	
23433006	2BSE-37		0.00 - 0.00	60g VOC (ALE215)	S						X								X
				250g Amber Jar (ALE210)	S	X			X	X		X	X	X	X	X	X	X	
				1kg TUB with Handle (ALE260)	S		X												
23433001	2BSE-36		0.00 - 0.00	60g VOC (ALE215)	S						X								X
				250g Amber Jar (ALE210)	S	X			X	X		X	X	X	X	X	X	X	
23432994	2BSE-21		0.00 - 0.00	60g VOC (ALE215)	S						X								X
				250g Amber Jar (ALE210)	S	X		X	X	X		X	X	X	X	X	X	X	
				1kg TUB with Handle (ALE260)	S		X												
23432990	2BSE-20		0.00 - 0.00	60g VOC (ALE215)	S						X								X
				250g Amber Jar (ALE210)	S	X		X	X	X		X	X	X	X	X	X	X	

CERTIFICATE OF ANALYSIS

SDG:	201215-62	**Client Reference:**	P18-669	**Report Number:**	583598
Location:	Llanwern	**Order Number:**		**Superseded Report:**	583597

Results Legend

X **Test**

N **No Determination Possible**

Sample Types -

S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

			Lab Sample No(s)	Customer Sample Reference	AGS Reference	Depth (m)	Container	Sample Type
			23432753	2BSE-42		0.00 - 0.00	60g VOC (ALE215)	S
GRO by GC-FID (S)	All	NDPs: 0 Tests: 48					X	
VOC MS (S)	All	NDPs: 0 Tests: 51					X	

CERTIFICATE OF ANALYSIS

SDG:	201215-62	**Client Reference:**	P18-669	**Report Number:**	583598
Location:	Llanwern	**Order Number:**		**Superseded Report:**	583597

Sample Descriptions

Grain Sizes

very fine	<0.063mm	fine	0.063mm - 0.1mm	medium	0.1mm - 2mm	coarse	2mm - 10mm	very coarse	>10mm

Lab Sample No(s)	Customer Sample Ref.	Depth (m)	Colour	Description	Inclusions	Inclusions 2
23432757	2BN-1	0.00 - 0.00	Dark Brown	Sandy Clay Loam	Stones	Vegetation
23432763	2BN-2	0.00 - 0.00	Dark Brown	Sandy Loam	Stones	N/A
23432768	2BN-3	0.00 - 0.00	Dark Brown	Loamy Sand	None	Stones
23432776	2BN-4	0.00 - 0.00	Dark Brown	Sandy Loam	Stones	N/A
23432780	2BN-5	0.00 - 0.00	Dark Brown	Sandy Clay Loam	Stones	Vegetation
23432790	2BN-6	0.00 - 0.00	Dark Brown	Sandy Clay Loam	Stones	Vegetation
23432795	2BN-7	0.00 - 0.00	Dark Brown	Loamy Sand	None	Stones
23432801	2BN-8	0.00 - 0.00	Dark Brown	Loamy Sand	Vegetation	Stones
23432805	2BN-9	0.00 - 0.00	Dark Brown	Sandy Clay Loam	Stones	Vegetation
23432810	2BN-10	0.00 - 0.00	Dark Brown	Loamy Sand	None	Stones
23432817	2BN2-1	0.00 - 0.00	Dark Brown	Sandy Clay Loam	Stones	None
23432823	2BN2-2	0.00 - 0.00	Dark Brown	Sandy Loam	Stones	None
23432829	2BN2-3	0.00 - 0.00	Dark Brown	Sandy Clay Loam	Stones	None
23432837	2BN2-4	0.00 - 0.00	Dark Brown	Sandy Clay Loam	Stones	Vegetation
23432845	2BN2-5	0.00 - 0.00	Dark Brown	Sandy Clay Loam	Stones	Vegetation
23432860	2BN2-6	0.00 - 0.00	Dark Brown	Sandy Clay Loam	Stones	Vegetation
23432866	2BN2-7	0.00 - 0.00	Dark Brown	Sandy Clay Loam	Stones	Vegetation
23432871	2BN2-12	0.00 - 0.00	Dark Brown	Sandy Clay Loam	Stones	Vegetation
23432875	2BN2-13	0.00 - 0.00	Black	Sandy Loam	Stones	None
23432880	2BN2-14	0.00 - 0.00	Dark Brown	Sandy Clay Loam	Stones	None
23432885	2BN2-15	0.00 - 0.00	Dark Brown	Sandy Loam	Stones	None
23432889	2BN2-16	0.00 - 0.00	Dark Brown	Sandy Clay Loam	Stones	None
23432897	2BN2-17	0.00 - 0.00	Dark Brown	Sandy Clay Loam	Stones	Vegetation
23432910	2BN2-18	0.00 - 0.00	Dark Brown	Sandy Clay Loam	Stones	Vegetation
23432918	2BN2-19	0.00 - 0.00	Dark Brown	Sandy Clay Loam	Stones	Vegetation
23432941	2BN2-20	0.00 - 0.00	Dark Brown	Sandy Clay Loam	Stones	Vegetation
23432949	2BN2-21	0.00 - 0.00	Dark Brown	Sandy Clay Loam	Stones	Vegetation
23432955	2BN2-22	0.00 - 0.00	Dark Brown	Sandy Clay Loam	Stones	Vegetation
23432959	2BN2-23	0.00 - 0.00	Dark Brown	Sandy Clay Loam	Stones	Vegetation
23432963	2BN2-24	0.00 - 0.00	Dark Brown	Sandy Clay Loam	Stones	Vegetation
23432967	2BN2-25	0.00 - 0.00	Dark Brown	Sandy Clay Loam	Stones	Vegetation
23432973	2BN2-26	0.00 - 0.00	Dark Brown	Sandy Clay Loam	Stones	None
23432977	2BN2-27	0.00 - 0.00	Dark Brown	Sandy Loam	Stones	None
23432981	2BN2-28	0.00 - 0.00	Dark Brown	Sandy Loam	Stones	None
23432722	2BSE-15	0.00 - 0.00	Dark Brown	Sandy Loam	Stones	None
23432786	2BSE-16	0.00 - 0.00	Dark Brown	Sandy Clay Loam	Stones	None
23432853	2BSE-17	0.00 - 0.00	Dark Brown	Sandy Clay Loam	Stones	None
23432930	2BSE-18	0.00 - 0.00	Dark Brown	Sandy Loam	Stones	None
23432986	2BSE-19	0.00 - 0.00	Dark Brown	Sandy Clay Loam	Stones	None

CERTIFICATE OF ANALYSIS

SDG:	201215-62	**Client Reference:**	P18-669	**Report Number:**	583598
Location:	Llanwern	**Order Number:**		**Superseded Report:**	583597

			Colour	Description	Inclusions	Inclusions 2
23432990	2BSE-20	0.00 - 0.00	Dark Brown	Sandy Clay Loam	Stones	None
23432994	2BSE-21	0.00 - 0.00	Dark Brown	Sandy Loam	Stones	None
23433001	2BSE-36	0.00 - 0.00	Dark Brown	Sandy Loam	Stones	None
23433006	2BSE-37	0.00 - 0.00	Dark Brown	Sandy Loam	Stones	Vegetation
23432728	2BSE-38	0.00 - 0.00	Dark Brown	Sandy Loam	Stones	Vegetation
23432735	2BSE-39	0.00 - 0.00	Dark Brown	Sandy Loam	Stones	None
23432740	2BSE-40	0.00 - 0.00	Dark Brown	Sandy Clay Loam	Stones	Vegetation
23432745	2BSE-41	0.00 - 0.00	Dark Brown	Sandy Clay Loam	Stones	Vegetation
23432753	2BSE-42	0.00 - 0.00	Dark Brown	Sand	Stones	Vegetation

These descriptions are only intended to act as a cross check if sample identities are questioned, and to provide a log of sample matrices with respect to MCERTS validation. They are not intended as full geological descriptions.

We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally ocurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample.

Other coarse granular materials such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

Validated

CERTIFICATE OF ANALYSIS

SDG:	201215-62	**Client Reference:**	P18-669	**Report Number:**	583598
Location:	Llanwern	**Order Number:**		**Superseded Report:**	583597

Results Legend	
#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	2BN-1	2BN-2	2BN-3	2BN-4	2BN-5	2BN-6
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	14/12/2020	14/12/2020	14/12/2020	14/12/2020	14/12/2020	14/12/2020
			Sample Time	.	.	.	.	.	.
			Date Received	15/12/2020	15/12/2020	15/12/2020	15/12/2020	15/12/2020	15/12/2020
			SDG Ref	201215-62	201215-62	201215-62	201215-62	201215-62	201215-62
			Lab Sample No.(s)	23432757	23432763	23432768	23432776	23432780	23432790
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		9.6	13	13	15	6	8.5
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	<12 M	<12 M	<12 M	<12 M	<12 M
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	0.0115 M	0.0117 M	<0.01 M	<0.01 M
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M	<0.015 M	0.105 M	<0.015 M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 M	<0.035 M	0.117 M	<0.035 M	<0.035 M
Soil Organic Matter (SOM)	<0.35 %	TM132		30.5 #	29.8 #	21.4 #	48.6 #	22.6 #	25.3 #
pH	1 pH Units	TM133		8.77 M	10.3 M	11.3 M	10.9 M	9.99 M	9.51 M
Cyanide, Total	<1 mg/kg	TM153		<1 M	<1 M	1.09 M	1.26 M	<1 M	1.02 M
Arsenic	<0.6 mg/kg	TM181		17.8 M	10.5 M	7.02 M	9.62 M	9.86 M	7.62 M
Cadmium	<0.02 mg/kg	TM181		1.79 M	1.48 M	0.726 M	1.68 M	0.621 M	1.14 M
Chromium	<0.9 mg/kg	TM181		117 M	97.7 M	300 M	191 M	45.9 M	84.7 M
Copper	<1.4 mg/kg	TM181		26.6 M	24.9 M	20.5 M	26.1 M	22.3 M	19.1 M
Iron	<1000 mg/kg	TM181		71900 #	77800 #	105000 #	81400 #	57500 #	76600 #
Lead	<0.7 mg/kg	TM181		196 M	172 M	201 M	197 M	141 M	126 M
Manganese	<0.13 mg/kg	TM181		17600 M	7790 M	13000 M	13100 M	398 M	5980 M
Mercury	<0.14 mg/kg	TM181		<0.14 M	<0.14 M	0.17 M	<0.14 M	0.167 M	<0.14 M
Nickel	<0.2 mg/kg	TM181		18.8 M	21.7 M	16.9 M	18.5 M	22.1 M	22.4 M
Selenium	<1 mg/kg	TM181		5.76 #	<1 #	4.53 #	3.46 #	<1 #	<1 #
Vanadium	<0.2 mg/kg	TM181		214 #		457 #	253 #	84.1 #	153 #
Zinc	<1.9 mg/kg	TM181		730 M	614 M	880 M	730 M	493 M	505 M

Validated

CERTIFICATE OF ANALYSIS

SDG:	201215-62	**Client Reference:**	P18-669	**Report Number:**	583598
Location:	Llanwern	**Order Number:**		**Superseded Report:**	583597

Results Legend	
#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	2BN-7	2BN-8	2BN-9	2BN-10	2BN2-1	2BN2-2
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	14/12/2020	14/12/2020	14/12/2020	14/12/2020	14/12/2020	14/12/2020
			Sample Time	.	.	.	.	.	.
			Date Received	15/12/2020	15/12/2020	15/12/2020	15/12/2020	15/12/2020	15/12/2020
			SDG Ref	201215-62	201215-62	201215-62	201215-62	201215-62	201215-62
			Lab Sample No.(s)	23432795	23432801	23432805	23432810	23432817	23432823
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		13	17	3.9	16	9.2	12
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	<12 M	<12 M	<12 M	<12 M	<12 M
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 M	0.0121 M	<0.01 M	<0.01 M	0.011 M	<0.01 M
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M	0.011 M	<0.01 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M
Soil Organic Matter (SOM)	<0.35 %	TM132		55.2 #	31.7 #	51.4 #	14.9 #	33.4 #	27.4 #
pH	1 pH Units	TM133		10.1 M	11.2 M	10.9 M	10.2 M	10.4 M	11.5 M
Cyanide, Total	<1 mg/kg	TM153		<1 M	<1 M	<1 M	<1 M	<1 M	<1 M
Arsenic	<0.6 mg/kg	TM181		8.69 M	10.3 M	12.8 M	12.6 M	8.61 M	7.33 M
Cadmium	<0.02 mg/kg	TM181		1.72 M	1.89 M	1.67 M	1.11 M	1.44 M	0.873 M
Chromium	<0.9 mg/kg	TM181		122 M	141 M	149 M	144 M	176 M	191 M
Copper	<1.4 mg/kg	TM181		22.1 M	22.3 M	26.9 M	44.6 M	21.5 M	18.4 M
Iron	<1000 mg/kg	TM181		65200 #	93400 #	76700 #	116000 #	98600 #	81400 #
Lead	<0.7 mg/kg	TM181		214 M	311 M	257 M	120 M	185 M	86.3 M
Manganese	<0.13 mg/kg	TM181		7630 M	14400 M	10500 M	11200 M	12200 M	12700 M
Mercury	<0.14 mg/kg	TM181		<0.14 M	0.195 M	<0.14 M	<0.14 M	<0.14 M	<0.14 M
Nickel	<0.2 mg/kg	TM181		18.1 M	18.7 M	19.8 M	29.1 M	15.3 M	12.1 M
Selenium	<1 mg/kg	TM181		1.74 #	5.25 #	2.66 #	<1 #	3.56 #	4.53 #
Vanadium	<0.2 mg/kg	TM181		206 #	425 #	211 #	218 #	323 #	246 #
Zinc	<1.9 mg/kg	TM181		760 M	1430 M	688 M	458 M	802 M	360 M

Validated

CERTIFICATE OF ANALYSIS

SDG:	201215-62	**Client Reference:**	P18-669	**Report Number:**	583598
Location:	Llanwern	**Order Number:**		**Superseded Report:**	583597

Results Legend	
#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	2BN2-3	2BN2-4	2BN2-5	2BN2-6	2BN2-7	2BN2-12
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	14/12/2020	14/12/2020	14/12/2020	14/12/2020	14/12/2020	14/12/2020
			Sample Time	.	.	.	.	.	.
			Date Received	15/12/2020	15/12/2020	15/12/2020	15/12/2020	15/12/2020	15/12/2020
			SDG Ref	201215-62	201215-62	201215-62	201215-62	201215-62	201215-62
			Lab Sample No.(s)	23432829	23432837	23432845	23432860	23432866	23432871
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		8.8	8.4	7.7	9.5	9	9.7
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	<12 M	<12 M	<12 M	<12 M	<12 M
Phenol	<0.01 mg/kg	TM062 (S)		0.011 M	<0.01 M	0.0108 M	0.0222 M	0.011 M	<0.01 M
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	0.0108 M	0.0222 M	<0.01 M	<0.01 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M	<0.015 M	0.0777 M	<0.015 M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 M	<0.035 M	0.122 M	<0.035 M	<0.035 M
Soil Organic Matter (SOM)	<0.35 %	TM132		31 #	22.1 #	36.4 #	28.1 #	43.8 #	24.1 #
pH	1 pH Units	TM133		10.6 M	10.9 M	10.7 M	11.4 M	10.8 M	10.5 M
Cyanide, Total	<1 mg/kg	TM153		<1 M	1.44 M	1.56 M	2.05 M	<1 M	1.54 M
Arsenic	<0.6 mg/kg	TM181		10.7 M	6.21 M	10.3 M	8.06 M	14.6 M	8.2 M
Cadmium	<0.02 mg/kg	TM181		0.323 M	0.741 M	1.21 M	1.03 M	3.98 M	1.28 M
Chromium	<0.9 mg/kg	TM181		119 M	191 M	222 M	187 M	193 M	174 M
Copper	<1.4 mg/kg	TM181		21.4 M	18.3 M	35.4 M	20.1 M	30.4 M	19.8 M
Iron	<1000 mg/kg	TM181		132000 #	80100 #	125000 #	113000 #	161000 #	112000 #
Lead	<0.7 mg/kg	TM181		163 M	78.9 M	183 M	178 M	492 M	187 M
Manganese	<0.13 mg/kg	TM181		11800 M	12700 M	17200 M	15100 M	12100 M	12500 M
Mercury	<0.14 mg/kg	TM181		0.3 M	<0.14 M	<0.14 M	<0.14 M	<1.4 M	<0.14 M
Nickel	<0.2 mg/kg	TM181		11.9 M	11 M	24 M	13.1 M	31 M	15 M
Selenium	<1 mg/kg	TM181		<1 #	3.55 #	3.91 #	1.6 #	<10 #	1.13 #
Vanadium	<0.2 mg/kg	TM181		319 #	231 #	300 #	200 #	313 #	174 #
Zinc	<1.9 mg/kg	TM181		764 M	337 M	800 M	858 M	1870 M	934 M

Validated

CERTIFICATE OF ANALYSIS

SDG:	201215-62	**Client Reference:**	P18-669	**Report Number:**	583598
Location:	Llanwern	**Order Number:**		**Superseded Report:**	583597

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	2BN2-13	2BN2-14	2BN2-15	2BN2-16	2BN2-17	2BN2-18
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	14/12/2020	14/12/2020	14/12/2020	14/12/2020	14/12/2020	14/12/2020
			Sample Time	.	.	.	.	.	.
			Date Received	15/12/2020	15/12/2020	15/12/2020	15/12/2020	15/12/2020	15/12/2020
			SDG Ref	201215-62	201215-62	201215-62	201215-62	201215-62	201215-62
			Lab Sample No.(s)	23432875	23432880	23432885	23432889	23432897	23432910
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		12	12	7.3	11	9.8	9.3
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	<12 M	<12 M	<12 M	<12 M	<12 M
Phenol	<0.01 mg/kg	TM062 (S)		0.0113 M	0.0114 M	0.0108 M	0.0112 M	0.0111 M	0.011 M
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M
Soil Organic Matter (SOM)	<0.35 %	TM132		36.4 #	16 #	21.2 #	26.2 #	18.1 #	25 #
pH	1 pH Units	TM133		11.2 M	11.1 M	11 M	11.1 M	11.4 M	11.2 M
Cyanide, Total	<1 mg/kg	TM153		<1 M	<1 M	<1 M	<1 M	<1 M	1.28 M
Arsenic	<0.6 mg/kg	TM181		34.3 M	8.02 M	4.28 M	7.71 M	5.41 M	7.22 M
Cadmium	<0.02 mg/kg	TM181		1.42 M	2.25 M	<0.02 M	1.58 M	0.999 M	0.792 M
Chromium	<0.9 mg/kg	TM181		259 M	206 M	300 M	137 M	226 M	164 M
Copper	<1.4 mg/kg	TM181		25.4 M	24 M	21 M	20.5 M	21.8 M	18.2 M
Iron	<1000 mg/kg	TM181		115000 #	95400 #	102000 #	64700 #	91300 #	83200 #
Lead	<0.7 mg/kg	TM181		169 M	250 M	77.6 M	166 M	108 M	89.8 M
Manganese	<0.13 mg/kg	TM181		17500 M	16000 M	12900 M	9600 M	15600 M	11900 M
Mercury	<0.14 mg/kg	TM181		<0.14 M	<0.14 M	0.153 M	<0.14 M	<0.14 M	<0.14 M
Nickel	<0.2 mg/kg	TM181		17 M	65 M	4.2 M	15 M	13.8 M	12.4 M
Selenium	<1 mg/kg	TM181		3.83 #	3.85 #	<1 #	2.22 #	3.98 #	1.97 #
Vanadium	<0.2 mg/kg	TM181		277 #	202 #	263 #	143 #	702 #	229 #
Zinc	<1.9 mg/kg	TM181		682 M	959 M	361 M	669 M	442 M	366 M

Validated

CERTIFICATE OF ANALYSIS

SDG:	201215-62	**Client Reference:**	P18-669	**Report Number:**	583598
Location:	Llanwern	**Order Number:**		**Superseded Report:**	583597

Results Legend	
#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	2BN2-19	2BN2-20	2BN2-21	2BN2-22	2BN2-23	2BN2-24
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	14/12/2020	14/12/2020	14/12/2020	14/12/2020	14/12/2020	14/12/2020
			Sample Time	.	.	.	.	.	.
			Date Received	15/12/2020	15/12/2020	15/12/2020	15/12/2020	15/12/2020	15/12/2020
			SDG Ref	201215-62	201215-62	201215-62	201215-62	201215-62	201215-62
			Lab Sample No.(s)	23432918	23432941	23432949	23432955	23432959	23432963
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		4.8	10	8.3	6.7	7.5	9.3
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	<12 M	<12 M	<12 M	<12 M	<12 M
Phenol	<0.01 mg/kg	TM062 (S)		0.0105 M	0.0222 M	<0.1 M	0.0107 M	0.0108 M	<0.01 M
Cresols	<0.01 mg/kg	TM062 (S)		0.0105 M	0.0111 M	<0.1 M	0.0107 M	0.0108 M	<0.01 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	0.0222 M	<0.15 M	0.0322 M	<0.015 M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	0.0555 M	<0.35 M	0.0536 M	<0.035 M	<0.035 M
Soil Organic Matter (SOM)	<0.35 %	TM132		13.8 #	33.1 #	30.3 #	21.7 #	24.3 #	30 #
pH	1 pH Units	TM133		10.6 M	10.9 M	10.9 M	11.3 M	11.2 M	10.7 M
Cyanide, Total	<1 mg/kg	TM153		<1 M	1.99 M	<1 M	1.81 M	1.89 M	1.39 M
Arsenic	<0.6 mg/kg	TM181		9.77 M	7.07 M	10.4 M	9.06 M	9.37 M	11.7 M
Cadmium	<0.02 mg/kg	TM181		0.0825 M	1.25 M	0.985 M	1.28 M	1.87 M	2.03 M
Chromium	<0.9 mg/kg	TM181		214 M	211 M	148 M	272 M	152 M	134 M
Copper	<1.4 mg/kg	TM181		34.3 M	19.3 M	25.8 M	26.6 M	25.7 M	22.3 M
Iron	<1000 mg/kg	TM181		163000 #	87600 #	117000 #	124000 #	99600 #	105000 #
Lead	<0.7 mg/kg	TM181		128 M	152 M	182 M	206 M	258 M	297 M
Manganese	<0.13 mg/kg	TM181		12000 M	15300 M	12000 M	17900 M	8990 M	11100 M
Mercury	<0.14 mg/kg	TM181		0.387 M	<0.14 M	<0.14 M	<0.14 M	<0.14 M	<0.14 M
Nickel	<0.2 mg/kg	TM181		20 M	12.2 M	14.9 M	13.5 M	16.5 M	18.9 M
Selenium	<1 mg/kg	TM181		<1 #	3.77 #	<1 #	3.34 #	1.79 #	<1 #
Vanadium	<0.2 mg/kg	TM181		263 #	206 #	174 #	333 #	194 #	177 #
Zinc	<1.9 mg/kg	TM181		570 M	603 M	844 M	1000 M	1210 M	1360 M

Validated

CERTIFICATE OF ANALYSIS

SDG:	201215-62	**Client Reference:**	P18-669	**Report Number:**	583598
Location:	Llanwern	**Order Number:**		**Superseded Report:**	583597

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	2BN2-25	2BN2-26	2BN2-27	2BN2-28	2BSE-15	2BSE-16
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	14/12/2020	14/12/2020	14/12/2020	14/12/2020	11/12/2020	11/12/2020
			Sample Time	.	.	.	.	.	.
			Date Received	15/12/2020	15/12/2020	15/12/2020	15/12/2020	15/12/2020	15/12/2020
			SDG Ref	201215-62	201215-62	201215-62	201215-62	201215-62	201215-62
			Lab Sample No.(s)	23432967	23432973	23432977	23432981	23432722	23432786
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		8.1	14	12	12	7.6	18
Gross Calorific Value in Dry Matter Q(V/gr/d)	<0.5 MJ/kg	SUB						3.37	2.27
Gross Calorific Value Original Q(V/gr/ar)	<0.5 MJ/kg	SUB						2.93	1.97
Net Calorific Value in Dry Matter Q(V/net/d)	<0.5 MJ/kg	SUB						3.15	2.11
Net Calorific Value in Original Q(V/net/ar)	<0.5 MJ/kg	SUB						2.44	1.53
Water Analytical M (ad)	<0.5 %	SUB						1.43	0.89
Water Gross M(ex)	<0.5 %	SUB						11.6	12.5
Water Total M(ar)	<0.5 %	SUB						12.9	13.2
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	<12 M	<12 M	<12 M	<12 M	<12 M
Phenol	<0.01 mg/kg	TM062 (S)		0.0109 M	<0.01 M	0.0113 M	0.0114 M	<0.01 M	<0.01 M
Cresols	<0.01 mg/kg	TM062 (S)		0.0109 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M
Soil Organic Matter (SOM)	<0.35 %	TM132		40.5 #	43.1 #	29 #	27.6 #	40.9 #	22.6 #
pH	1 pH Units	TM133		10.8 M	10.7 M	10.6 M	10.7 M	11.5 M	10.6 M
Cyanide, Total	<1 mg/kg	TM153		1.23 M	1.1 M	<1 M	1.25 M	1.61 M	<1 M
Arsenic	<0.6 mg/kg	TM181		11 M	10.5 M	8.09 M	9.15 M	<6 M	9.03 M
Cadmium	<0.02 mg/kg	TM181		2.54 M	3.21 M	2.84 M	2.35 M	<0.2 M	0.361 M
Chromium	<0.9 mg/kg	TM181		171 M	146 M	210 M	85.2 M	35.8 M	206 M
Copper	<1.4 mg/kg	TM181		75.8 M	38.9 M	19.8 M	20.6 M	<14 M	30.5 M
Iron	<1000 mg/kg	TM181		111000 #	112000 #	92500 #	80200 #	13100 #	114000 #
Lead	<0.7 mg/kg	TM181		358 M	403 M	346 M	286 M	7.14 M	85.6 M
Manganese	<0.13 mg/kg	TM181		10500 M	9600 M	12800 M	10900 M	23700 M	15800 M
Mercury	<0.14 mg/kg	TM181		<0.14 M	<0.14 M	<0.14 M	<0.14 M	<1.4 M	<0.14 M
Nickel	<0.2 mg/kg	TM181		16.8 M	23.3 M	14.8 M	15.3 M	<2 M	13.7 M
Selenium	<1 mg/kg	TM181		1.81 #	<1 #	2.85 #	2.92 #	<10 #	2 #
Vanadium	<0.2 mg/kg	TM181		190 #	194 #	166 #	262 #	67.7 #	254 #
Zinc	<1.9 mg/kg	TM181		1600 M	1650 M	1490 M	1330 M	21.1 M	377 M

Validated

CERTIFICATE OF ANALYSIS

SDG:	201215-62	**Client Reference:**	P18-669	**Report Number:**	583598
Location:	Llanwern	**Order Number:**		**Superseded Report:**	583597

Results Legend	
#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	2BSE-17	2BSE-18	2BSE-19	2BSE-20	2BSE-21	2BSE-36
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	11/12/2020	11/12/2020	11/12/2020	11/12/2020	11/12/2020	11/12/2020
			Sample Time	.	.	.	.	.	.
			Date Received	15/12/2020	15/12/2020	15/12/2020	15/12/2020	15/12/2020	15/12/2020
			SDG Ref	201215-62	201215-62	201215-62	201215-62	201215-62	201215-62
			Lab Sample No.(s)	23432853	23432930	23432986	23432990	23432994	23433001
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		8.5	13	8.3	11	7.7	13
Gross Calorific Value in Dry Matter Q(V/gr/d)	<0.5 MJ/kg	SUB		3.19	5.66	1.07	3.64	3.18	
Gross Calorific Value Original Q(V/gr/ar)	<0.5 MJ/kg	SUB		2.65	4.76	0.93	3.35	2.82	
Net Calorific Value in Dry Matter Q(V/net/d)	<0.5 MJ/kg	SUB		3.07	5.4	0.94	3.5	3	
Net Calorific Value in Original Q(V/net/ar)	<0.5 MJ/kg	SUB		2.16	4.18	0.52	3.04	2.4	
Water Analytical M (ad)	<0.5 %	SUB		1.33	1.36	1.02	0.59	0.87	
Water Gross M(ex)	<0.5 %	SUB		15.8	14.7	12	7.35	10.6	
Water Total M(ar)	<0.5 %	SUB		16.9	15.9	13	7.9	11.4	
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	<12 M	<12 M	<12 M	<12 M	<12 M
Phenol	<0.01 mg/kg	TM062 (S)		0.0109 M	0.0115 M	<0.01 M	<0.01 M	<0.01 M	0.0116 M
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M
Soil Organic Matter (SOM)	<0.35 %	TM132		21.9 #	26.7 #	13 #	15.7 #	12.9 #	37.9 #
pH	1 pH Units	TM133		9.84 M	11.8 M	8.89 M	10.8 M	10.6 M	11.6 M
Cyanide, Total	<1 mg/kg	TM153		5.32 M	<1 M	<1 M	<1 M	<1 M	<1 M
Arsenic	<0.6 mg/kg	TM181		7.98 M	5 M	7.95 M	8.28 M	6.24 M	7.11 M
Cadmium	<0.02 mg/kg	TM181		0.731 M	<0.02 M	1.23 M	0.307 M	0.299 M	0.383 M
Chromium	<0.9 mg/kg	TM181		450 M	300 M	226 M	240 M	452 M	285 M
Copper	<1.4 mg/kg	TM181		31.8 M	17.8 M	23.2 M	19.1 M	31.5 M	19.4 M
Iron	<1000 mg/kg	TM181		121000 #	102000 #	63500 #	120000 #	135000 #	91100 #
Lead	<0.7 mg/kg	TM181		78.7 M	32.6 M	81.1 M	68.7 M	63 M	51.8 M
Manganese	<0.13 mg/kg	TM181		21900 M	21600 M	9480 M	14400 M	24000 M	18500 M
Mercury	<0.14 mg/kg	TM181		<1.4 M	<0.14 M	<0.14 M	<0.14 M	<0.14 M	<0.14 M
Nickel	<0.2 mg/kg	TM181		15.4 M	9.33 M	19.3 M	12.8 M	10.3 M	11.7 M
Selenium	<1 mg/kg	TM181		12.6 #	4.29 #	2.6 #	1.18 #	5.76 #	6.55 #
Vanadium	<0.2 mg/kg	TM181		508 #	376 #	169 #	303 #	569 #	437 #
Zinc	<1.9 mg/kg	TM181		218 M	117 M	240 M	268 M	201 M	167 M

Validated

CERTIFICATE OF ANALYSIS

SDG:	201215-62	**Client Reference:**	P18-669	**Report Number:**	583598
Location:	Llanwern	**Order Number:**		**Superseded Report:**	583597

Results Legend

#	ISO17025 accredited.
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aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
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**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	2BSE-37	2BSE-38	2BSE-39	2BSE-40	2BSE-41	2BSE-42
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	11/12/2020	11/12/2020	11/12/2020	11/12/2020	11/12/2020	11/12/2020
			Sample Time	.	.	.	.	.	.
			Date Received	15/12/2020	15/12/2020	15/12/2020	15/12/2020	15/12/2020	15/12/2020
			SDG Ref	201215-62	201215-62	201215-62	201215-62	201215-62	201215-62
			Lab Sample No.(s)	23433006	23432728	23432735	23432740	23432745	23432753
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		8.2	15	8	8	4	5.3
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	<12 M	<12 M	<12 M	<12 M	<12 M
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.1 M	<0.01 M	<0.01 M	0.0106 M
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.1 M	<0.01 M	<0.01 M	<0.01 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M	<0.15 M	<0.015 M	<0.015 M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 M	<0.35 M	<0.035 M	<0.035 M	<0.035 M
Soil Organic Matter (SOM)	<0.35 %	TM132		15.6 #	20 #	23.6 #	14.1 #	19.3 #	20.9 #
pH	1 pH Units	TM133		10.5 M	9.77 M	11.2 M	8.98 M	10.3 M	11.4 M
Cyanide, Total	<1 mg/kg	TM153		<1 M	4.22 M	<1 M	<1 M	<1 M	<1 M
Arsenic	<0.6 mg/kg	TM181		6.2 M	21.1 M	5.1 M	8.35 M	12.6 M	6.88 M
Cadmium	<0.02 mg/kg	TM181		0.339 M	10.4 M	0.256 M	1.01 M	1.4 M	0.442 M
Chromium	<0.9 mg/kg	TM181		309 M	55.4 M	331 M	66.3 M	68.8 M	252 M
Copper	<1.4 mg/kg	TM181		17.7 M	44.2 M	18.8 M	15.9 M	26.5 M	19.6 M
Iron	<1000 mg/kg	TM181		132000 #	174000 #	123000 #	75600 #	134000 #	113000 #
Lead	<0.7 mg/kg	TM181		63.1 M	1390 M	40.8 M	69.3 M	142 M	57.9 M
Manganese	<0.13 mg/kg	TM181		17300 M	5230 M	21200 M	6350 M	6700 M	18900 M
Mercury	<0.14 mg/kg	TM181		<0.14 M	<1.4 M	<0.14 M	<0.14 M	<1.4 M	<0.14 M
Nickel	<0.2 mg/kg	TM181		9.94 M	40.5 M	12 M	20.8 M	29.1 M	11.9 M
Selenium	<1 mg/kg	TM181		3.84 #	<10 #	5.68 #	<1 #	<10 #	3.69 #
Vanadium	<0.2 mg/kg	TM181		302 #	112 #	591 #	98.4 #	134 #	248 #
Zinc	<1.9 mg/kg	TM181		242 M	4980 M	148 M	222 M	453 M	197 M

Validated

CERTIFICATE OF ANALYSIS

SDG:	201215-62	**Client Reference:**	P18-669	**Report Number:**	583598
Location:	Llanwern	**Order Number:**		**Superseded Report:**	583597

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	2BN-1	2BN-2	2BN-3	2BN-4	2BN-5	2BN-6
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	14/12/2020	14/12/2020	14/12/2020	14/12/2020	14/12/2020	14/12/2020
			Sample Time	.	.	.	.	.	.
			Date Received	15/12/2020	15/12/2020	15/12/2020	15/12/2020	15/12/2020	15/12/2020
			SDG Ref	201215-62	201215-62	201215-62	201215-62	201215-62	201215-62
			Lab Sample No.(s)	23432757	23432763	23432768	23432776	23432780	23432790
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		80.6	80	82.3	86	80.2	80.9
Acenaphthene-d10 % recovery**	%	TM218		83.4	81.4	83.3	86.5	82.1	83.7
Phenanthrene-d10 % recovery**	%	TM218		83.8	86.3	87.8	83.8	84.4	85.1
Chrysene-d12 % recovery**	%	TM218		89.9	92.5	78.4	87.6	89.4	92.3
Perylene-d12 % recovery**	%	TM218		83.6	87.7	80.1	85.4	87.6	85
Naphthalene	<9 µg/kg	TM218		2870 M	2390 M	2730 M	2240 M	2420 M	2790 M
Acenaphthylene	<12 µg/kg	TM218		1410 M	653 M	786 M	813 M	614 M	718 M
Acenaphthene	<8 µg/kg	TM218		157 M	115 M	117 M	98.8 M	107 M	157 M
Fluorene	<10 µg/kg	TM218		814 M	590 M	528 M	534 M	436 M	537 M
Phenanthrene	<15 µg/kg	TM218		8900 M	4230 M	3500 M	4920 M	3050 M	3550 M
Anthracene	<16 µg/kg	TM218		2060 M	1350 M	1150 M	1510 M	1030 M	1090 M
Fluoranthene	<17 µg/kg	TM218		16800 M	7570 M	7560 M	9390 M	6300 M	6070 M
Pyrene	<15 µg/kg	TM218		11800 M	5410 M	6210 M	7100 M	4920 M	4310 M
Benz(a)anthracene	<14 µg/kg	TM218		7070 M	3420 M	3670 M	4240 M	3120 M	2920 M
Chrysene	<10 µg/kg	TM218		6730 M	2990 M	3260 M	3970 M	2690 M	2650 M
Benzo(b)fluoranthene	<15 µg/kg	TM218		8310 M	4410 M	3500 M	4430 M	3870 M	3960 M
Benzo(k)fluoranthene	<14 µg/kg	TM218		3090 M	1640 M	1620 M	1480 M	1330 M	1240 M
Benzo(a)pyrene	<15 µg/kg	TM218		6250 M	2670 M	3210 M	3450 M	2470 M	2460 M
Indeno(1,2,3-cd)pyrene	<18 µg/kg	TM218		5090 M	2080 M	2450 M	2360 M	1950 M	1810 M
Dibenzo(a,h)anthracene	<23 µg/kg	TM218		1110 M	304 M	536 M	562 M	305 M	423 M
Benzo(g,h,i)perylene	<24 µg/kg	TM218		4720 M	1750 M	2170 M	2380 M	1560 M	1730 M
PAH, Total Detected USEPA 16	<118 µg/kg	TM218		87200	41600	43000	49500	36200	36400

Validated

CERTIFICATE OF ANALYSIS

SDG: 201215-62 **Client Reference:** P18-669 **Report Number:** 583598
Location: Llanwern **Order Number:** **Superseded Report:** 583597

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	2BN-7	2BN-8	2BN-9	2BN-10	2BN2-1	2BN2-2
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	14/12/2020	14/12/2020	14/12/2020	14/12/2020	14/12/2020	14/12/2020
			Sample Time	.	.	.	.	.	.
			Date Received	15/12/2020	15/12/2020	15/12/2020	15/12/2020	15/12/2020	15/12/2020
			SDG Ref	201215-62	201215-62	201215-62	201215-62	201215-62	201215-62
			Lab Sample No.(s)	23432795	23432801	23432805	23432810	23432817	23432823
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		81.4	81.7	83	80.6	80.6	78.2
Acenaphthene-d10 % recovery**	%	TM218		81.9	81.2	87.5	80.8	81.8	80.7
Phenanthrene-d10 % recovery**	%	TM218		89.4	86.4	87.5	83.8	85.4	86
Chrysene-d12 % recovery**	%	TM218		77.2	77.6	98.4	78.7	75.6	76.1
Perylene-d12 % recovery**	%	TM218		81.4	78.8	91	82.9	78.3	79
Naphthalene	<9 µg/kg	TM218		4060 M	2300 M	2250 M	1940 M	2700 M	2870 M
Acenaphthylene	<12 µg/kg	TM218		1110 M	674 M	1050 M	476 M	843 M	792 M
Acenaphthene	<8 µg/kg	TM218		177 M	121 M	153 M	87 M	141 M	143 M
Fluorene	<10 µg/kg	TM218		826 M	489 M	755 M	330 M	724 M	616 M
Phenanthrene	<15 µg/kg	TM218		5670 M	3390 M	5460 M	2100 M	5010 M	4480 M
Anthracene	<16 µg/kg	TM218		1590 M	1070 M	1910 M	576 M	1440 M	1390 M
Fluoranthene	<17 µg/kg	TM218		11800 M	6870 M	11000 M	3960 M	8500 M	8310 M
Pyrene	<15 µg/kg	TM218		8310 M	5380 M	8580 M	3010 M	6280 M	6300 M
Benz(a)anthracene	<14 µg/kg	TM218		5240 M	3180 M	5110 M	1880 M	3880 M	3810 M
Chrysene	<10 µg/kg	TM218		4040 M	2600 M	4960 M	1410 M	3490 M	3340 M
Benzo(b)fluoranthene	<15 µg/kg	TM218		4740 M	3330 M	6520 M	1880 M	5870 M	5790 M
Benzo(k)fluoranthene	<14 µg/kg	TM218		1680 M	1220 M	2240 M	750 M	1910 M	1650 M
Benzo(a)pyrene	<15 µg/kg	TM218		4610 M	2800 M	4200 M	1640 M	3460 M	3350 M
Indeno(1,2,3-cd)pyrene	<18 µg/kg	TM218		3700 M	2140 M	3010 M	1310 M	2780 M	2800 M
Dibenzo(a,h)anthracene	<23 µg/kg	TM218		849 M	467 M	704 M	276 M	504 M	492 M
Benzo(g,h,i)perylene	<24 µg/kg	TM218		3210 M	1930 M	2840 M	1100 M	2250 M	2200 M
PAH, Total Detected USEPA 16	<118 µg/kg	TM218		61600	38000	60700	22700	49800	48300

Validated

CERTIFICATE OF ANALYSIS

SDG:	201215-62	**Client Reference:**	P18-669	**Report Number:**	583598
Location:	Llanwern	**Order Number:**		**Superseded Report:**	583597

PAH by GCMS

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	2BN2-3	2BN2-4	2BN2-5	2BN2-6	2BN2-7	2BN2-12
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	14/12/2020	14/12/2020	14/12/2020	14/12/2020	14/12/2020	14/12/2020
			Sample Time	.	.	.	.	.	.
			Date Received	15/12/2020	15/12/2020	15/12/2020	15/12/2020	15/12/2020	15/12/2020
			SDG Ref	201215-62	201215-62	201215-62	201215-62	201215-62	201215-62
			Lab Sample No.(s)	23432829	23432837	23432845	23432860	23432866	23432871
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		77.6	86.4	74.2	78.6	79	76.2
Acenaphthene-d10 % recovery**	%	TM218		81	87.3	75.5	84.7	86.5	81.7
Phenanthrene-d10 % recovery**	%	TM218		90.1	91.1	76	93.6	83	90.5
Chrysene-d12 % recovery**	%	TM218		84.2	78.4	70.3	81.1	72.5	80.9
Perylene-d12 % recovery**	%	TM218		71.7	78.5	70.4	70.4	81.5	70.9
Naphthalene	<9 µg/kg	TM218		2310 M	3060 M	10100 M	5580 M	18100 M	2750 M
Acenaphthylene	<12 µg/kg	TM218		766 M	1640 M	5900 M	1970 M	19700 M	1000 M
Acenaphthene	<8 µg/kg	TM218		139 M	279 M	308 M	410 M	28900 M	129 M
Fluorene	<10 µg/kg	TM218		640 M	1740 M	2760 M	1590 M	69100 M	667 M
Phenanthrene	<15 µg/kg	TM218		4000 M	11900 M	20900 M	11200 M	325000 M	4980 M
Anthracene	<16 µg/kg	TM218		1850 M	3280 M	13600 M	4630 M	108000 M	1910 M
Fluoranthene	<17 µg/kg	TM218		6800 M	22100 M	76300 M	19300 M	347000 M	8700 M
Pyrene	<15 µg/kg	TM218		5380 M	16100 M	56200 M	15300 M	218000 M	6380 M
Benz(a)anthracene	<14 µg/kg	TM218		2980 M	8580 M	40900 M	8440 M	112000 M	3640 M
Chrysene	<10 µg/kg	TM218		3030 M	6780 M	36100 M	8400 M	90400 M	3720 M
Benzo(b)fluoranthene	<15 µg/kg	TM218		3640 M	11000 M	49000 M	10700 M	136000 M	5320 M
Benzo(k)fluoranthene	<14 µg/kg	TM218		1090 M	3720 M	15600 M	2980 M	41500 M	1390 M
Benzo(a)pyrene	<15 µg/kg	TM218		2310 M	6380 M	27900 M	6350 M	79400 M	3060 M
Indeno(1,2,3-cd)pyrene	<18 µg/kg	TM218		1750 M	4890 M	21700 M	5210 M	65400 M	2580 M
Dibenzo(a,h)anthracene	<23 µg/kg	TM218		368 M	907 M	4550 M	1050 M	11700 M	507 M
Benzo(g,h,i)perylene	<24 µg/kg	TM218		1530 M	3950 M	16600 M	4200 M	50900 M	2040 M
PAH, Total Detected USEPA 16	<118 µg/kg	TM218		38600	106000	399000	107000	1720000	48800

Validated

CERTIFICATE OF ANALYSIS

SDG: 201215-62 **Client Reference:** P18-669 **Report Number:** 583598
Location: Llanwern **Order Number:** **Superseded Report:** 583597

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	2BN2-13	2BN2-14	2BN2-15	2BN2-16	2BN2-17	2BN2-18
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	14/12/2020	14/12/2020	14/12/2020	14/12/2020	14/12/2020	14/12/2020
			Sample Time	.	.	.	.	.	.
			Date Received	15/12/2020	15/12/2020	15/12/2020	15/12/2020	15/12/2020	15/12/2020
			SDG Ref	201215-62	201215-62	201215-62	201215-62	201215-62	201215-62
			Lab Sample No.(s)	23432875	23432880	23432885	23432889	23432897	23432910
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		80.7	82.3	79.4	81.9	82	81.8
Acenaphthene-d10 % recovery**	%	TM218		80.5	85.2	82.1	85.7	83.2	85
Phenanthrene-d10 % recovery**	%	TM218		83.5	87.9	85.9	86.5	82	88
Chrysene-d12 % recovery**	%	TM218		83.4	92.6	76	90.8	85.7	78.5
Perylene-d12 % recovery**	%	TM218		80.7	84.5	79.9	83.3	85.2	78.2
Naphthalene	<9 µg/kg	TM218		2240 M	2230 M	3410 M	2580 M	2310 M	1660 M
Acenaphthylene	<12 µg/kg	TM218		600 M	643 M	854 M	857 M	712 M	632 M
Acenaphthene	<8 µg/kg	TM218		107 M	108 M	175 M	156 M	125 M	144 M
Fluorene	<10 µg/kg	TM218		540 M	447 M	1070 M	691 M	528 M	579 M
Phenanthrene	<15 µg/kg	TM218		4070 M	3290 M	5950 M	4760 M	3560 M	3540 M
Anthracene	<16 µg/kg	TM218		1090 M	953 M	1430 M	1630 M	1140 M	986 M
Fluoranthene	<17 µg/kg	TM218		6830 M	6050 M	8230 M	8220 M	6360 M	5990 M
Pyrene	<15 µg/kg	TM218		4910 M	4870 M	6120 M	6100 M	4890 M	4680 M
Benz(a)anthracene	<14 µg/kg	TM218		3260 M	3010 M	3640 M	3730 M	3180 M	2680 M
Chrysene	<10 µg/kg	TM218		2810 M	2600 M	3090 M	3210 M	2610 M	2480 M
Benzo(b)fluoranthene	<15 µg/kg	TM218		4300 M	3170 M	5210 M	3870 M	3550 M	3850 M
Benzo(k)fluoranthene	<14 µg/kg	TM218		1400 M	1210 M	1620 M	1540 M	1160 M	1230 M
Benzo(a)pyrene	<15 µg/kg	TM218		2580 M	2440 M	3010 M	3000 M	2680 M	2220 M
Indeno(1,2,3-cd)pyrene	<18 µg/kg	TM218		2140 M	1780 M	2380 M	2220 M	2100 M	1800 M
Dibenzo(a,h)anthracene	<23 µg/kg	TM218		304 M	396 M	461 M	517 M	448 M	264 M
Benzo(g,h,i)perylene	<24 µg/kg	TM218		1570 M	1700 M	2020 M	1970 M	1940 M	1430 M
PAH, Total Detected USEPA 16	<118 µg/kg	TM218		38700	34900	48700	45000	37300	34200

Validated

CERTIFICATE OF ANALYSIS

SDG:	201215-62	**Client Reference:**	P18-669	**Report Number:**	583598
Location:	Llanwern	**Order Number:**		**Superseded Report:**	583597

PAH by GCMS

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	2BN2-19	2BN2-20	2BN2-21	2BN2-22	2BN2-23	2BN2-24
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	14/12/2020	14/12/2020	14/12/2020	14/12/2020	14/12/2020	14/12/2020
			Sample Time	.	.	.	.	.	.
			Date Received	15/12/2020	15/12/2020	15/12/2020	15/12/2020	15/12/2020	15/12/2020
			SDG Ref	201215-62	201215-62	201215-62	201215-62	201215-62	201215-62
			Lab Sample No.(s)	23432918	23432941	23432949	23432955	23432959	23432963
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		87.7	78.4	76.4	77.8	77.1	75.8
Acenaphthene-d10 % recovery**	%	TM218		90.4	83.1	84.3	79.1	84.7	78.9
Phenanthrene-d10 % recovery**	%	TM218		93	88.5	93.5	80.7	92	77.4
Chrysene-d12 % recovery**	%	TM218		80.3	73.1	83.7	70.6	79.8	88.8
Perylene-d12 % recovery**	%	TM218		82.5	77.5	73.7	74.1	70.2	84.9
Naphthalene	<9 µg/kg	TM218		3190 M	20000 M	7870 M	7510 M	5410 M	6180 M
Acenaphthylene	<12 µg/kg	TM218		7570 M	2790 M	2120 M	2180 M	1970 M	3890 M
Acenaphthene	<8 µg/kg	TM218		710 M	539 M	293 M	481 M	410 M	484 M
Fluorene	<10 µg/kg	TM218		12200 M	3210 M	1840 M	1920 M	1410 M	3950 M
Phenanthrene	<15 µg/kg	TM218		64800 M	18600 M	13400 M	13300 M	10800 M	29300 M
Anthracene	<16 µg/kg	TM218		18700 M	6570 M	5270 M	4810 M	3550 M	7850 M
Fluoranthene	<17 µg/kg	TM218		84800 M	27900 M	24600 M	23000 M	19800 M	37000 M
Pyrene	<15 µg/kg	TM218		56600 M	21100 M	17800 M	18400 M	15500 M	27700 M
Benz(a)anthracene	<14 µg/kg	TM218		30900 M	13500 M	10100 M	11000 M	8450 M	14400 M
Chrysene	<10 µg/kg	TM218		22900 M	10700 M	8490 M	9330 M	8200 M	13000 M
Benzo(b)fluoranthene	<15 µg/kg	TM218		31100 M	16500 M	12000 M	16900 M	10500 M	17100 M
Benzo(k)fluoranthene	<14 µg/kg	TM218		10800 M	6480 M	3510 M	4670 M	3310 M	5480 M
Benzo(a)pyrene	<15 µg/kg	TM218		19300 M	10800 M	7630 M	9670 M	6830 M	12400 M
Indeno(1,2,3-cd)pyrene	<18 µg/kg	TM218		14400 M	8620 M	6050 M	8020 M	5860 M	9280 M
Dibenzo(a,h)anthracene	<23 µg/kg	TM218		2760 M	1640 M	1260 M	1380 M	1100 M	1900 M
Benzo(g,h,i)perylene	<24 µg/kg	TM218		10400 M	6730 M	4980 M	6290 M	4410 M	8800 M
PAH, Total Detected USEPA 16	<118 µg/kg	TM218		391000	176000	127000	139000	107000	199000

Validated

CERTIFICATE OF ANALYSIS

SDG: 201215-62 **Client Reference:** P18-669 **Report Number:** 583598
Location: Llanwern **Order Number:** **Superseded Report:** 583597

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	2BN2-25	2BN2-26	2BN2-27	2BN2-28	2BSE-15	2BSE-16
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	14/12/2020	14/12/2020	14/12/2020	14/12/2020	11/12/2020	11/12/2020
			Sample Time	.	.	.	.	.	.
			Date Received	15/12/2020	15/12/2020	15/12/2020	15/12/2020	15/12/2020	15/12/2020
			SDG Ref	201215-62	201215-62	201215-62	201215-62	201215-62	201215-62
			Lab Sample No.(s)	23432967	23432973	23432977	23432981	23432722	23432786
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		77.3	80.1	83.7	77.3	78.6	81.2
Acenaphthene-d10 % recovery**	%	TM218		80.9	82.9	83.7	80.2	81	82.7
Phenanthrene-d10 % recovery**	%	TM218		83.9	82.8	82.4	84.1	85.2	86.2
Chrysene-d12 % recovery**	%	TM218		91.7	88	83.4	87.8	74.1	76.6
Perylene-d12 % recovery**	%	TM218		88.2	83	80.6	81	77.4	82.6
Naphthalene	<9 µg/kg	TM218		6090 M	3190 M	2620 M	2600 M	3370 M	2950 M
Acenaphthylene	<12 µg/kg	TM218		1740 M	1030 M	762 M	936 M	963 M	1220 M
Acenaphthene	<8 µg/kg	TM218		297 M	205 M	151 M	204 M	149 M	176 M
Fluorene	<10 µg/kg	TM218		1200 M	667 M	465 M	1110 M	576 M	1310 M
Phenanthrene	<15 µg/kg	TM218		8210 M	4450 M	2900 M	6590 M	5500 M	10200 M
Anthracene	<16 µg/kg	TM218		2810 M	1580 M	957 M	1870 M	1400 M	2490 M
Fluoranthene	<17 µg/kg	TM218		16000 M	9380 M	6430 M	10400 M	9240 M	13600 M
Pyrene	<15 µg/kg	TM218		12500 M	7390 M	5020 M	7880 M	7250 M	9440 M
Benz(a)anthracene	<14 µg/kg	TM218		7760 M	4580 M	3200 M	4630 M	4120 M	5370 M
Chrysene	<10 µg/kg	TM218		7080 M	4370 M	2780 M	4720 M	3290 M	4870 M
Benzo(b)fluoranthene	<15 µg/kg	TM218		9910 M	6310 M	4210 M	5730 M	5930 M	7130 M
Benzo(k)fluoranthene	<14 µg/kg	TM218		3350 M	1940 M	1410 M	1760 M	1920 M	2260 M
Benzo(a)pyrene	<15 µg/kg	TM218		6640 M	3820 M	2860 M	3600 M	3510 M	3980 M
Indeno(1,2,3-cd)pyrene	<18 µg/kg	TM218		5070 M	2720 M	2220 M	2590 M	2890 M	3400 M
Dibenzo(a,h)anthracene	<23 µg/kg	TM218		1170 M	618 M	498 M	621 M	442 M	570 M
Benzo(g,h,i)perylene	<24 µg/kg	TM218		4690 M	2670 M	2150 M	2570 M	2320 M	2580 M
PAH, Total Detected USEPA 16	<118 µg/kg	TM218		94600	54900	38600	57800	52900	71500

Validated

CERTIFICATE OF ANALYSIS

SDG: 201215-62 **Client Reference:** P18-669 **Report Number:** 583598
Location: Llanwern **Order Number:** **Superseded Report:** 583597

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	2BSE-17	2BSE-18	2BSE-19	2BSE-20	2BSE-21	2BSE-36
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	11/12/2020	11/12/2020	11/12/2020	11/12/2020	11/12/2020	11/12/2020
			Sample Time	.	.	.	.	.	.
			Date Received	15/12/2020	15/12/2020	15/12/2020	15/12/2020	15/12/2020	15/12/2020
			SDG Ref	201215-62	201215-62	201215-62	201215-62	201215-62	201215-62
			Lab Sample No.(s)	23432853	23432930	23432986	23432990	23432994	23433001
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		78.1	79.4	77.4	84.3	84.9	81.9
Acenaphthene-d10 % recovery**	%	TM218		83.9	82.5	82.4	80.5	81.3	82.2
Phenanthrene-d10 % recovery**	%	TM218		82.5	87.1	83.9	83.8	81.4	86.8
Chrysene-d12 % recovery**	%	TM218		78.6	75	90.1	82.5	80.6	77.4
Perylene-d12 % recovery**	%	TM218		71.9	78	86.6	84.1	84.1	79.2
Naphthalene	<9 µg/kg	TM218		6850 M	5580 M	945 M	1050 M	3440 M	2860 M
Acenaphthylene	<12 µg/kg	TM218		940 M	1180 M	375 M	337 M	829 M	694 M
Acenaphthene	<8 µg/kg	TM218		77.2 M	156 M	55.4 M	49.6 M	82.3 M	118 M
Fluorene	<10 µg/kg	TM218		695 M	864 M	260 M	252 M	509 M	487 M
Phenanthrene	<15 µg/kg	TM218		3990 M	7260 M	2460 M	2100 M	5030 M	4380 M
Anthracene	<16 µg/kg	TM218		2200 M	1850 M	556 M	578 M	1270 M	1670 M
Fluoranthene	<17 µg/kg	TM218		6800 M	10400 M	4030 M	3230 M	7470 M	7310 M
Pyrene	<15 µg/kg	TM218		4990 M	7790 M	2870 M	2340 M	5540 M	5450 M
Benz(a)anthracene	<14 µg/kg	TM218		3160 M	4350 M	1840 M	1470 M	3160 M	3230 M
Chrysene	<10 µg/kg	TM218		3450 M	3480 M	1760 M	1380 M	3270 M	2910 M
Benzo(b)fluoranthene	<15 µg/kg	TM218		4750 M	5870 M	2110 M	2090 M	4380 M	4580 M
Benzo(k)fluoranthene	<14 µg/kg	TM218		1450 M	1820 M	760 M	756 M	1610 M	1310 M
Benzo(a)pyrene	<15 µg/kg	TM218		2740 M	3480 M	1490 M	1290 M	2800 M	2750 M
Indeno(1,2,3-cd)pyrene	<18 µg/kg	TM218		2230 M	2730 M	1090 M	968 M	2200 M	2200 M
Dibenzo(a,h)anthracene	<23 µg/kg	TM218		476 M	484 M	240 M	204 M	451 M	387 M
Benzo(g,h,i)perylene	<24 µg/kg	TM218		1900 M	2370 M	1040 M	867 M	1880 M	1920 M
PAH, Total Detected USEPA 16	<118 µg/kg	TM218		46700	59700	21900	18900	43900	42200

Validated

CERTIFICATE OF ANALYSIS

SDG: 201215-62 **Client Reference:** P18-669 **Report Number:** 583598
Location: Llanwern **Order Number:** **Superseded Report:** 583597

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	2BSE-37	2BSE-38	2BSE-39	2BSE-40	2BSE-41	2BSE-42
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	11/12/2020	11/12/2020	11/12/2020	11/12/2020	11/12/2020	11/12/2020
			Sample Time	.	.	.	.	.	.
			Date Received	15/12/2020	15/12/2020	15/12/2020	15/12/2020	15/12/2020	15/12/2020
			SDG Ref	201215-62	201215-62	201215-62	201215-62	201215-62	201215-62
			Lab Sample No.(s)	23433006	23432728	23432735	23432740	23432745	23432753
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		85.4	80.6	80.9	77.3	88.4	86.5
Acenaphthene-d10 % recovery**	%	TM218		87.5	83.2	83.1	83.3	85.8	85.3
Phenanthrene-d10 % recovery**	%	TM218		92.1	88.6	85.2	91.2	88.3	89.9
Chrysene-d12 % recovery**	%	TM218		76.4	74.7	76.7	83.4	83.6	89.6
Perylene-d12 % recovery**	%	TM218		80.1	73.4	78.9	75.1	85.8	90.7
Naphthalene	<9 µg/kg	TM218		4240 M	11300 M	4720 M	418 M	854 M	2630 M
Acenaphthylene	<12 µg/kg	TM218		1350 M	2030 M	993 M	214 M	314 M	745 M
Acenaphthene	<8 µg/kg	TM218		237 M	142 M	138 M	28.9 M	49.4 M	71.6 M
Fluorene	<10 µg/kg	TM218		1370 M	1210 M	782 M	197 M	268 M	581 M
Phenanthrene	<15 µg/kg	TM218		13500 M	8020 M	6310 M	1650 M	2030 M	4400 M
Anthracene	<16 µg/kg	TM218		3420 M	2530 M	1390 M	333 M	538 M	1120 M
Fluoranthene	<17 µg/kg	TM218		18200 M	12800 M	7930 M	2220 M	3230 M	5960 M
Pyrene	<15 µg/kg	TM218		12600 M	9610 M	5870 M	1490 M	2290 M	4380 M
Benz(a)anthracene	<14 µg/kg	TM218		6610 M	5930 M	3230 M	833 M	1480 M	2850 M
Chrysene	<10 µg/kg	TM218		5730 M	5100 M	2910 M	747 M	1300 M	2390 M
Benzo(b)fluoranthene	<15 µg/kg	TM218		8530 M	8520 M	4590 M	1010 M	2010 M	3740 M
Benzo(k)fluoranthene	<14 µg/kg	TM218		2580 M	2290 M	1600 M	337 M	718 M	1370 M
Benzo(a)pyrene	<15 µg/kg	TM218		4910 M	5070 M	2740 M	605 M	1250 M	2370 M
Indeno(1,2,3-cd)pyrene	<18 µg/kg	TM218		4100 M	3880 M	2260 M	511 M	1010 M	1900 M
Dibenzo(a,h)anthracene	<23 µg/kg	TM218		713 M	740 M	341 M	99.1 M	214 M	412 M
Benzo(g,h,i)perylene	<24 µg/kg	TM218		3070 M	3260 M	1840 M	389 M	873 M	1620 M
PAH, Total Detected USEPA 16	<118 µg/kg	TM218		91200	82500	47600	11100	18400	36500

Validated

CERTIFICATE OF ANALYSIS

SDG:	201215-62	**Client Reference:**	P18-669	**Report Number:**	583598
Location:	Llanwern	**Order Number:**		**Superseded Report:**	583597

TPH CWG (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	2BN-1	2BN-2	2BN-3	2BN-4	2BN-5	2BN-6
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	14/12/2020	14/12/2020	14/12/2020	14/12/2020	14/12/2020	14/12/2020
			Sample Time	.	.	.	.	.	.
			Date Received	15/12/2020	15/12/2020	15/12/2020	15/12/2020	15/12/2020	15/12/2020
			SDG Ref	201215-62	201215-62	201215-62	201215-62	201215-62	201215-62
			Lab Sample No.(s)	23432757	23432763	23432768	23432776	23432780	23432790
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		48.4 4 @	29 4 @	18.7 4 @	20.2 4 @	73.3 @	28.7 4 @
Aliphatics >C5-C6	<10 µg/kg	TM089		11.1 4 @	<10 4 @	<10 4 @	<10 4 @	<10 @	23 4 @
Aliphatics >C6-C8	<10 µg/kg	TM089		46.6 4 @	<10 4 @	<10 4 @	<10 4 @	<10 @	48.1 4 @
Aliphatics >C8-C10	<10 µg/kg	TM089		52.2 4 @	<10 4 @	<10 4 @	<10 4 @	<10 @	59 4 @
Aliphatics >C10-C12	<1000 µg/kg	TM414		1490	1420	<1000	<1000	1180	1560
Aliphatics >C12-C16	<1000 µg/kg	TM414		3740	4650	4330	3740	2500	3790
Aliphatics >C16-C21	<1000 µg/kg	TM414		10100	16100	21300	9870	9670	12000
Aliphatics >C21-C35	<1000 µg/kg	TM414		25900	37300	50400	29700	26200	33800
Aliphatics >C35-C44	<1000 µg/kg	TM414		6690	10300	12500	6010	7680	8050
Total Aliphatics >C10-C44	<5000 µg/kg	TM414		48000	69700	89300	50200	47200	59200
Total Aliphatics & Aromatics >C10-C44	<10000 µg/kg	TM414		273000	335000	304000	344000	254000	363000
Aromatics >EC5-EC7	<10 µg/kg	TM089		<10 4 @	<10 4 @	<10 4 @	<10 4 @	<10 @	<10 4 @
Aromatics >EC7-EC8	<10 µg/kg	TM089		<10 4 @	<10 4 @	<10 4 @	<10 4 @	<10 @	<10 4 @
Aromatics >EC8-EC10	<10 µg/kg	TM089		34.4 4 @	<10 4 @	<10 4 @	<10 4 @	<10 @	39.3 4 @
Aromatics > EC10-EC12	<1000 µg/kg	TM414		5660	7630	4930	4820	3660	6590
Aromatics > EC12-EC16	<1000 µg/kg	TM414		8490	11500	8730	10600	8010	14800
Aromatics > EC16-EC21	<1000 µg/kg	TM414		51400	57300	54600	75700	54300	82100
Aromatics > EC21-EC35	<1000 µg/kg	TM414		139000	166000	126000	180000	119000	171000
Aromatics >EC35-EC44	<1000 µg/kg	TM414		19800	23400	20100	22800	21500	29300
Aromatics > EC40-EC44	<1000 µg/kg	TM414		2560	4170	3520	2790	2860	4020
Total Aromatics > EC10-EC44	<5000 µg/kg	TM414		225000	265000	214000	294000	207000	304000
Total Aliphatics & Aromatics >C5-C44	<10000 µg/kg	TM414		273000	335000	304000	344000	254000	363000
Total Aliphatics >C5-C10	<50 µg/kg	TM089		110 4 @	<50 4 @	<50 4 @	<50 4 @	<50 @	130 4 @
Total Aromatics >EC5-EC10	<50 µg/kg	TM089		<50 4 @	<50 4 @	<50 4 @	<50 4 @	<50 @	<50 4 @
GRO >C5-C10	<20 µg/kg	TM089		110 4 @	<20 4 @	<20 4 @	<20 4 @	<20 @	130 4 @

Validated

CERTIFICATE OF ANALYSIS

SDG: 201215-62 **Client Reference:** P18-669 **Report Number:** 583598
Location: Llanwern **Order Number:** **Superseded Report:** 583597

TPH CWG (S)

Results Legend	
#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	2BN-7	2BN-8	2BN-9	2BN-10	2BN2-1	2BN2-2
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	14/12/2020	14/12/2020	14/12/2020	14/12/2020	14/12/2020	14/12/2020
			Sample Time	.	.	.	.	.	.
			Date Received	15/12/2020	15/12/2020	15/12/2020	15/12/2020	15/12/2020	15/12/2020
			SDG Ref	201215-62	201215-62	201215-62	201215-62	201215-62	201215-62
			Lab Sample No.(s)	23432795	23432801	23432805	23432810	23432817	23432823
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		28.6 4 @	20.1 4 @	17.3 4 @	48.6 4 @	33.3 4	31.2 4 @
Aliphatics >C5-C6	<10 µg/kg	TM089		16.1 4 @	12.1 4 @	<10 4 @	<10 4 @	45.1 4	11.3 4 @
Aliphatics >C6-C8	<10 µg/kg	TM089		23 4 @	12.1 4 @	<10 4 @	<10 4 @	35.2 4	11.3 4 @
Aliphatics >C8-C10	<10 µg/kg	TM089		18.4 4 @	10.9 4 @	<10 4 @	<10 4 @	33 4	<10 4 @
Aliphatics >C10-C12	<1000 µg/kg	TM414		1060	<1000	<1000	<1000	<1000	<1000
Aliphatics >C12-C16	<1000 µg/kg	TM414		3070	4140	3310	1350	4270	4690
Aliphatics >C16-C21	<1000 µg/kg	TM414		8860	20900	11200	5830	35600	26400
Aliphatics >C21-C35	<1000 µg/kg	TM414		23000	48700	40900	18100	46300	44700
Aliphatics >C35-C44	<1000 µg/kg	TM414		5490	12200	30300	4170	10900	9930
Total Aliphatics >C10-C44	<5000 µg/kg	TM414		41500	86700	86500	29600	97600	86200
Total Aliphatics & Aromatics >C10-C44	<10000 µg/kg	TM414		307000	260000	230000	128000	316000	232000
Aromatics >EC5-EC7	<10 µg/kg	TM089		<10 4 @	<10 4 @	<10 4 @	<10 4 @	<10 4	<10 4 @
Aromatics >EC7-EC8	<10 µg/kg	TM089		<10 4 @	<10 4 @	<10 4 @	<10 4 @	<10 4	<10 4 @
Aromatics >EC8-EC10	<10 µg/kg	TM089		11.5 4 @	<10 4 @	<10 4 @	<10 4 @	22 4	<10 4 @
Aromatics > EC10-EC12	<1000 µg/kg	TM414		4760	3510	2830	2560	6560	3680
Aromatics > EC12-EC16	<1000 µg/kg	TM414		9090	6050	6370	3550	10400	6250
Aromatics > EC16-EC21	<1000 µg/kg	TM414		73700	40800	34800	25400	55500	32200
Aromatics > EC21-EC35	<1000 µg/kg	TM414		159000	110000	88900	59800	132000	93300
Aromatics >EC35-EC44	<1000 µg/kg	TM414		19800	12200	10400	7040	14200	9900
Aromatics > EC40-EC44	<1000 µg/kg	TM414		2250	2390	1530	1170	2750	1540
Total Aromatics > EC10-EC44	<5000 µg/kg	TM414		266000	173000	143000	98400	218000	145000
Total Aliphatics & Aromatics >C5-C44	<10000 µg/kg	TM414		307000	260000	230000	128000	316000	232000
Total Aliphatics >C5-C10	<50 µg/kg	TM089		57.5 4 @	<50 4 @	<50 4 @	<50 4 @	113 4	<50 4 @
Total Aromatics >EC5-EC10	<50 µg/kg	TM089		<50 4 @	<50 4 @	<50 4 @	<50 4 @	<50 4	<50 4 @
GRO >C5-C10	<20 µg/kg	TM089		57.5 4 @	<20 4 @	<20 4 @	<20 4 @	113 4	<20 4 @

Validated

CERTIFICATE OF ANALYSIS

SDG: 201215-62 **Client Reference:** P18-669 **Report Number:** 583598
Location: Llanwern **Order Number:** **Superseded Report:** 583597

TPH CWG (S)

Results Legend	
#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	2BN2-3	2BN2-4	2BN2-5	2BN2-6	2BN2-7	2BN2-12
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	14/12/2020	14/12/2020	14/12/2020	14/12/2020	14/12/2020	14/12/2020
			Sample Time	.	.	.	.	.	.
			Date Received	15/12/2020	15/12/2020	15/12/2020	15/12/2020	15/12/2020	15/12/2020
			SDG Ref	201215-62	201215-62	201215-62	201215-62	201215-62	201215-62
			Lab Sample No.(s)	23432829	23432837	23432845	23432860	23432866	23432871
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		30.5 4 @	33.2 4	37.7 4 @	34.3 4 @	44.7 4 @	16.9 4 @
Aliphatics >C5-C6	<10 µg/kg	TM089		<10 4 @	<10 4	37.9 4 @	17.8 4 @	20.9 4 @	54.4 4 @
Aliphatics >C6-C8	<10 µg/kg	TM089		<10 4 @	<10 4	47.7 4 @	25.5 4 @	20.9 4 @	28.9 4 @
Aliphatics >C8-C10	<10 µg/kg	TM089		<10 4 @	<10 4	43.3 4 @	22.2 4 @	16.5 4 @	21.1 4 @
Aliphatics >C10-C12	<1000 µg/kg	TM414		<1000	1510	<1000	<1000	<1000	<1000
Aliphatics >C12-C16	<1000 µg/kg	TM414		1700	6580	8150	4050	3940	2350
Aliphatics >C16-C21	<1000 µg/kg	TM414		11300	27600	38300	25700	25700	12100
Aliphatics >C21-C35	<1000 µg/kg	TM414		22700	47300	47400	48000	55700	25700
Aliphatics >C35-C44	<1000 µg/kg	TM414		5400	12900	16900	9350	12100	5210
Total Aliphatics >C10-C44	<5000 µg/kg	TM414		41300	95800	112000	87400	97700	45700
Total Aliphatics & Aromatics >C10-C44	<10000 µg/kg	TM414		209000	441000	670000	348000	420000	261000
Aromatics >EC5-EC7	<10 µg/kg	TM089		<10 4 @	<10 4	<10 4 @	<10 4 @	<10 4 @	<10 4 @
Aromatics >EC7-EC8	<10 µg/kg	TM089		<10 4 @	<10 4	<10 4 @	<10 4 @	<10 4 @	<10 4 @
Aromatics >EC8-EC10	<10 µg/kg	TM089		<10 4 @	<10 4	29.2 4 @	14.4 4 @	11 4 @	14.4 4 @
Aromatics > EC10-EC12	<1000 µg/kg	TM414		4120	6280	20200	6240	7620	4790
Aromatics > EC12-EC16	<1000 µg/kg	TM414		5860	12500	16400	11400	10800	7980
Aromatics > EC16-EC21	<1000 µg/kg	TM414		39400	79200	119000	64400	74400	51800
Aromatics > EC21-EC35	<1000 µg/kg	TM414		102000	209000	354000	156000	205000	135000
Aromatics >EC35-EC44	<1000 µg/kg	TM414		16600	38200	48900	22900	24600	16100
Aromatics > EC40-EC44	<1000 µg/kg	TM414		1780	7300	8070	3340	2960	3000
Total Aromatics > EC10-EC44	<5000 µg/kg	TM414		168000	345000	559000	261000	322000	216000
Total Aliphatics & Aromatics >C5-C44	<10000 µg/kg	TM414		209000	441000	671000	348000	420000	262000
Total Aliphatics >C5-C10	<50 µg/kg	TM089		<50 4 @	<50 4	129 4 @	65.5 4 @	58.2 4 @	104 4 @
Total Aromatics >EC5-EC10	<50 µg/kg	TM089		<50 4 @	<50 4	<50 4 @	<50 4 @	<50 4 @	<50 4 @
GRO >C5-C10	<20 µg/kg	TM089		<20 4 @	<20 4	129 4 @	65.5 4 @	58.2 4 @	104 4 @

Validated

CERTIFICATE OF ANALYSIS

SDG:	201215-62	**Client Reference:**	P18-669	**Report Number:**	583598
Location:	Llanwern	**Order Number:**		**Superseded Report:**	583597

TPH CWG (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	2BN2-13	2BN2-14	2BN2-15	2BN2-16	2BN2-17	2BN2-18
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	14/12/2020	14/12/2020	14/12/2020	14/12/2020	14/12/2020	14/12/2020
			Sample Time	.	.	.	.	.	.
			Date Received	15/12/2020	15/12/2020	15/12/2020	15/12/2020	15/12/2020	15/12/2020
			SDG Ref	201215-62	201215-62	201215-62	201215-62	201215-62	201215-62
			Lab Sample No.(s)	23432875	23432880	23432885	23432889	23432897	23432910
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		13.2 4 @	34.6 4 @	34.5 4 @	13.1 4 @	58.7 4 @	38.5 4 @
Aliphatics >C5-C6	<10 µg/kg	TM089		<10 4 @	12.5 4 @	20.5 4 @	13.4 4 @	<10 4 @	24.2 4 @
Aliphatics >C6-C8	<10 µg/kg	TM089		<10 4 @	11.4 4 @	24.8 4 @	10.1 4 @	<10 4 @	22 4 @
Aliphatics >C8-C10	<10 µg/kg	TM089		<10 4 @	<10 4 @	19.4 4 @	<10 4 @	<10 4 @	15.4 4 @
Aliphatics >C10-C12	<1000 µg/kg	TM414		<1000	<1000	<1000	<1000	<1000	<1000
Aliphatics >C12-C16	<1000 µg/kg	TM414		4340	2620	3090	2600	5160	3180
Aliphatics >C16-C21	<1000 µg/kg	TM414		23500	18000	19700	16800	26700	20500
Aliphatics >C21-C35	<1000 µg/kg	TM414		41800	30900	36400	31000	48300	33800
Aliphatics >C35-C44	<1000 µg/kg	TM414		10300	7450	9280	7030	11500	7890
Total Aliphatics >C10-C44	<5000 µg/kg	TM414		80300	59700	68900	57700	92600	65700
Total Aliphatics & Aromatics >C10-C44	<10000 µg/kg	TM414		365000	193000	236000	336000	365000	380000
Aromatics >EC5-EC7	<10 µg/kg	TM089		<10 4 @	<10 4 @	<10 4 @	<10 4 @	<10 4 @	<10 4 @
Aromatics >EC7-EC8	<10 µg/kg	TM089		<10 4 @	<10 4 @	<10 4 @	<10 4 @	<10 4 @	<10 4 @
Aromatics >EC8-EC10	<10 µg/kg	TM089		<10 4 @	<10 4 @	12.9 4 @	<10 4 @	<10 4 @	11 4 @
Aromatics > EC10-EC12	<1000 µg/kg	TM414		5530	2820	4760	4580	8610	5770
Aromatics > EC12-EC16	<1000 µg/kg	TM414		9940	6280	6060	7750	12400	11700
Aromatics > EC16-EC21	<1000 µg/kg	TM414		64900	33800	36100	56500	59100	87900
Aromatics > EC21-EC35	<1000 µg/kg	TM414		182000	80300	107000	182000	163000	188000
Aromatics >EC35-EC44	<1000 µg/kg	TM414		22600	9750	12800	26800	28900	21000
Aromatics > EC40-EC44	<1000 µg/kg	TM414		4090	1840	1760	4490	5660	2940
Total Aromatics > EC10-EC44	<5000 µg/kg	TM414		285000	133000	167000	278000	272000	314000
Total Aliphatics & Aromatics >C5-C44	<10000 µg/kg	TM414		365000	193000	236000	336000	365000	380000
Total Aliphatics >C5-C10	<50 µg/kg	TM089		<50 4 @	<50 4 @	64.7 4 @	<50 4 @	<50 4 @	61.6 4 @
Total Aromatics >EC5-EC10	<50 µg/kg	TM089		<50 4 @	<50 4 @	<50 4 @	<50 4 @	<50 4 @	<50 4 @
GRO >C5-C10	<20 µg/kg	TM089		<20 4 @	<20 4 @	64.7 4 @	<20 4 @	<20 4 @	61.6 4 @

Validated

CERTIFICATE OF ANALYSIS

SDG: 201215-62 **Client Reference:** P18-669 **Report Number:** 583598
Location: Llanwern **Order Number:** **Superseded Report:** 583597

TPH CWG (S)

Results Legend	
#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	2BN2-19	2BN2-20	2BN2-21	2BN2-22	2BN2-23	2BN2-24
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	14/12/2020	14/12/2020	14/12/2020	14/12/2020	14/12/2020	14/12/2020
			Sample Time	.	.	.	.	.	.
			Date Received	15/12/2020	15/12/2020	15/12/2020	15/12/2020	15/12/2020	15/12/2020
			SDG Ref	201215-62	201215-62	201215-62	201215-62	201215-62	201215-62
			Lab Sample No.(s)	23432918	23432941	23432949	23432955	23432959	23432963
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		32.7 4 @	19.2 4 @	40.5 4	23.1 4 @	28.5 4	17.1 4 @
Aliphatics >C5-C6	<10 µg/kg	TM089		10.5 4 @	21.1 4 @	20.7 4	12.9 4 @	16.2 4	17.6 4 @
Aliphatics >C6-C8	<10 µg/kg	TM089		13.7 4 @	25.5 4 @	29.5 4	11.8 4 @	18.4 4	19.8 4 @
Aliphatics >C8-C10	<10 µg/kg	TM089		<10 4 @	31.1 4 @	24 4	10.7 4 @	15.1 4	16.5 4 @
Aliphatics >C10-C12	<1000 µg/kg	TM414		1120	<1000	<1000	<1000	<1000	<1000
Aliphatics >C12-C16	<1000 µg/kg	TM414		4850	5950	7410	5060	5040	3090
Aliphatics >C16-C21	<1000 µg/kg	TM414		24000	29400	46700	33000	28300	20300
Aliphatics >C21-C35	<1000 µg/kg	TM414		40100	41100	49400	54000	42800	52700
Aliphatics >C35-C44	<1000 µg/kg	TM414		14900	14200	14600	9930	9960	11000
Total Aliphatics >C10-C44	<5000 µg/kg	TM414		85000	91400	119000	102000	86800	87300
Total Aliphatics & Aromatics >C10-C44	<10000 µg/kg	TM414		760000	566000	522000	440000	316000	1250000
Aromatics >EC5-EC7	<10 µg/kg	TM089		<10 4 @	<10 4 @	<10 4	<10 4 @	<10 4	<10 4 @
Aromatics >EC7-EC8	<10 µg/kg	TM089		<10 4 @	<10 4 @	<10 4	<10 4 @	<10 4	<10 4 @
Aromatics >EC8-EC10	<10 µg/kg	TM089		<10 4 @	21.1 4 @	15.3 4	<10 4 @	<10 4	11 4 @
Aromatics > EC10-EC12	<1000 µg/kg	TM414		5660	20700	19000	7980	6160	10600
Aromatics > EC12-EC16	<1000 µg/kg	TM414		30400	13800	14100	13300	9610	62900
Aromatics > EC16-EC21	<1000 µg/kg	TM414		243000	122000	88800	75700	51100	415000
Aromatics > EC21-EC35	<1000 µg/kg	TM414		352000	280000	248000	213000	141000	562000
Aromatics >EC35-EC44	<1000 µg/kg	TM414		45100	38300	32700	27700	20900	107000
Aromatics > EC40-EC44	<1000 µg/kg	TM414		8280	6170	4700	5000	4140	12600
Total Aromatics > EC10-EC44	<5000 µg/kg	TM414		676000	475000	403000	338000	229000	1160000
Total Aliphatics & Aromatics >C5-C44	<10000 µg/kg	TM414		761000	566000	522000	440000	316000	1250000
Total Aliphatics >C5-C10	<50 µg/kg	TM089		<50 4 @	77.7 4 @	74.2 4	<50 4 @	<50 4	53.9 4 @
Total Aromatics >EC5-EC10	<50 µg/kg	TM089		<50 4 @	<50 4 @	<50 4	<50 4 @	<50 4	<50 4 @
GRO >C5-C10	<20 µg/kg	TM089		<20 4 @	77.7 4 @	74.2 4	<20 4 @	<20 4	53.9 4 @

Validated

CERTIFICATE OF ANALYSIS

SDG: 201215-62 **Client Reference:** P18-669 **Report Number:** 583598
Location: Llanwern **Order Number:** **Superseded Report:** 583597

TPH CWG (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	2BN2-25	2BN2-26	2BN2-27	2BN2-28	2BSE-15	2BSE-16
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	14/12/2020	14/12/2020	14/12/2020	14/12/2020	11/12/2020	11/12/2020
			Sample Time	.	.	.	.	.	.
			Date Received	15/12/2020	15/12/2020	15/12/2020	15/12/2020	15/12/2020	15/12/2020
			SDG Ref	201215-62	201215-62	201215-62	201215-62	201215-62	201215-62
			Lab Sample No.(s)	23432967	23432973	23432977	23432981	23432722	23432786
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		28.5 4	42.7 4 @	17.7 4 @	32.5 4 @	51.1 4 @	29.9 4 @
Aliphatics >C5-C6	<10 µg/kg	TM089		14.1 4	24.4 4 @	<10 4 @	14.8 4 @	17.3 4 @	19.5 4 @
Aliphatics >C6-C8	<10 µg/kg	TM089		15.2 4	34.8 4 @	<10 4 @	13.7 4 @	67.1 4 @	32.9 4 @
Aliphatics >C8-C10	<10 µg/kg	TM089		13.1 4	34.8 4 @	<10 4 @	11.4 4 @	83.4 4 @	24.4 4 @
Aliphatics >C10-C12	<1000 µg/kg	TM414		<1000	<1000	<1000	<1000	1050	<1000
Aliphatics >C12-C16	<1000 µg/kg	TM414		5070	2090	4060	3410	6300	2440
Aliphatics >C16-C21	<1000 µg/kg	TM414		28400	14100	22800	17700	27700	8380
Aliphatics >C21-C35	<1000 µg/kg	TM414		58400	39500	46900	49800	45200	21700
Aliphatics >C35-C44	<1000 µg/kg	TM414		16500	7290	13900	17100	32100	7520
Total Aliphatics >C10-C44	<5000 µg/kg	TM414		109000	63200	88400	88500	112000	40700
Total Aliphatics & Aromatics >C10-C44	<10000 µg/kg	TM414		376000	289000	384000	291000	234000	186000
Aromatics >EC5-EC7	<10 µg/kg	TM089		<10 4	<10 4 @	<10 4 @	<10 4 @	13 4 @	<10 4 @
Aromatics >EC7-EC8	<10 µg/kg	TM089		<10 4	<10 4 @	<10 4 @	<10 4 @	21.7 4 @	<10 4 @
Aromatics >EC8-EC10	<10 µg/kg	TM089		<10 4	23.2 4 @	<10 4 @	<10 4 @	55.2 4 @	15.9 4 @
Aromatics > EC10-EC12	<1000 µg/kg	TM414		8210	5180	6700	5090	3810	2720
Aromatics > EC12-EC16	<1000 µg/kg	TM414		10400	7980	9340	6980	8140	5770
Aromatics > EC16-EC21	<1000 µg/kg	TM414		60400	50500	69900	44100	30000	41600
Aromatics > EC21-EC35	<1000 µg/kg	TM414		167000	145000	186000	130000	70800	84900
Aromatics >EC35-EC44	<1000 µg/kg	TM414		21400	17400	23400	16800	8460	10700
Aromatics > EC40-EC44	<1000 µg/kg	TM414		3340	3160	3480	1820	2940	1350
Total Aromatics > EC10-EC44	<5000 µg/kg	TM414		267000	226000	295000	202000	121000	146000
Total Aliphatics & Aromatics >C5-C44	<10000 µg/kg	TM414		376000	290000	384000	291000	234000	186000
Total Aliphatics >C5-C10	<50 µg/kg	TM089		<50 4	94 4 @	<50 4 @	<50 4 @	168 4 @	76.9 4 @
Total Aromatics >EC5-EC10	<50 µg/kg	TM089		<50 4	<50 4 @	<50 4 @	<50 4 @	89.9 4 @	<50 4 @
GRO >C5-C10	<20 µg/kg	TM089		<20 4	94 4 @	<20 4 @	<20 4 @	258 4 @	76.9 4 @

Validated

CERTIFICATE OF ANALYSIS

SDG: 201215-62 **Client Reference:** P18-669 **Report Number:** 583598
Location: Llanwern **Order Number:** **Superseded Report:** 583597

TPH CWG (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	2BSE-17	2BSE-18	2BSE-19	2BSE-20	2BSE-21	2BSE-36
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	11/12/2020	11/12/2020	11/12/2020	11/12/2020	11/12/2020	11/12/2020
			Sample Time	.	.	.	.	.	.
			Date Received	15/12/2020	15/12/2020	15/12/2020	15/12/2020	15/12/2020	15/12/2020
			SDG Ref	201215-62	201215-62	201215-62	201215-62	201215-62	201215-62
			Lab Sample No.(s)	23432853	23432930	23432986	23432990	23432994	23433001
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		88.5 @	25.5 4 @	61.1 4 @	29.8 4 @	16.3 4 @	29.3 4 @
Aliphatics >C5-C6	<10 µg/kg	TM089		12 @	26.5 4 @	<10 4 @	<10 4 @	<10 4 @	<10 4 @
Aliphatics >C6-C8	<10 µg/kg	TM089		14.2 @	39.1 4 @	<10 4 @	<10 4 @	<10 4 @	10.4 4 @
Aliphatics >C8-C10	<10 µg/kg	TM089		17.5 @	31.1 4 @	<10 4 @	<10 4 @	<10 4 @	<10 4 @
Aliphatics >C10-C12	<1000 µg/kg	TM414		<1000	<5000	<1000	<1000	<1000	2190
Aliphatics >C12-C16	<1000 µg/kg	TM414		1170	<5000	<1000	3350	4110	8250
Aliphatics >C16-C21	<1000 µg/kg	TM414		9860	18100	<1000	19600	16400	30300
Aliphatics >C21-C35	<1000 µg/kg	TM414		25800	21400	1310	37800	44700	54100
Aliphatics >C35-C44	<1000 µg/kg	TM414		2950	<5000	<1000	8960	11400	27200
Total Aliphatics >C10-C44	<5000 µg/kg	TM414		39900	40600	<5000	69900	77300	122000
Total Aliphatics & Aromatics >C10-C44	<10000 µg/kg	TM414		128000	136000	24600	177000	262000	285000
Aromatics >EC5-EC7	<10 µg/kg	TM089		<10 @	10.4 4 @	<10 4 @	<10 4 @	<10 4 @	<10 4 @
Aromatics >EC7-EC8	<10 µg/kg	TM089		<10 @	11.5 4 @	<10 4 @	<10 4 @	<10 4 @	<10 4 @
Aromatics >EC8-EC10	<10 µg/kg	TM089		12 @	20.7 4 @	<10 4 @	<10 4 @	<10 4 @	<10 4 @
Aromatics > EC10-EC12	<1000 µg/kg	TM414		7750	<5000	<1000	1880	4140	5130
Aromatics > EC12-EC16	<1000 µg/kg	TM414		3160	<5000	<1000	4170	9680	9850
Aromatics > EC16-EC21	<1000 µg/kg	TM414		21300	29400	5510	21600	50500	42700
Aromatics > EC21-EC35	<1000 µg/kg	TM414		48900	52500	14600	73000	108000	98300
Aromatics >EC35-EC44	<1000 µg/kg	TM414		6710	<5000	1400	6120	12300	7130
Aromatics > EC40-EC44	<1000 µg/kg	TM414		1110	<5000	<1000	1690	1570	1710
Total Aromatics > EC10-EC44	<5000 µg/kg	TM414		87900	95800	22700	107000	185000	163000
Total Aliphatics & Aromatics >C5-C44	<10000 µg/kg	TM414		128000	136000	22700	177000	262000	285000
Total Aliphatics >C5-C10	<50 µg/kg	TM089		<50 @	96.6 4 @	<50 4 @	<50 4 @	<50 4 @	<50 4 @
Total Aromatics >EC5-EC10	<50 µg/kg	TM089		<50 @	<50 4 @	<50 4 @	<50 4 @	<50 4 @	<50 4 @
GRO >C5-C10	<20 µg/kg	TM089		<20 @	96.6 4 @	<20 4 @	<20 4 @	<20 4 @	<20 4 @

Validated

CERTIFICATE OF ANALYSIS

SDG: 201215-62 **Client Reference:** P18-669 **Report Number:** 583598
Location: Llanwern **Order Number:** **Superseded Report:** 583597

TPH CWG (S)

Results Legend	
#	ISO17025 accredited.
M	mCERTS accredited.
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diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	2BSE-37	2BSE-38	2BSE-39	2BSE-40	2BSE-41	2BSE-42
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	11/12/2020	11/12/2020	11/12/2020	11/12/2020	11/12/2020	11/12/2020
			Sample Time	.	.	.	.	.	.
			Date Received	15/12/2020	15/12/2020	15/12/2020	15/12/2020	15/12/2020	15/12/2020
			SDG Ref	201215-62	201215-62	201215-62	201215-62	201215-62	201215-62
			Lab Sample No.(s)	23433006	23432728	23432735	23432740	23432745	23432753
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		35.3 4 @	75.9 @	27.3 4 @	78.5 @	26.6 4 @	30.4 4
Aliphatics >C5-C6	<10 µg/kg	TM089		16.3 4 @	<10 @	27.2 4 @	<10 @	<10 4 @	14.8 4
Aliphatics >C6-C8	<10 µg/kg	TM089		24 4 @	<10 @	29.3 4 @	<10 @	14.6 4 @	16.9 4
Aliphatics >C8-C10	<10 µg/kg	TM089		12 4 @	<10 @	25 4 @	<10 @	15.6 4 @	13.7 4
Aliphatics >C10-C12	<1000 µg/kg	TM414		<1000	<1000	2720	<1000	<1000	<1000
Aliphatics >C12-C16	<1000 µg/kg	TM414		3760	5210	9830	<1000	1230	2860
Aliphatics >C16-C21	<1000 µg/kg	TM414		15800	48200	44300	1300	7880	13900
Aliphatics >C21-C35	<1000 µg/kg	TM414		32700	132000	67200	2950	13200	27800
Aliphatics >C35-C44	<1000 µg/kg	TM414		13300	30900	21300	2760	2450	5370
Total Aliphatics >C10-C44	<5000 µg/kg	TM414		66300	217000	145000	7270	24900	50300
Total Aliphatics & Aromatics >C10-C44	<10000 µg/kg	TM414		233000	565000	374000	79000	82200	176000
Aromatics >EC5-EC7	<10 µg/kg	TM089		<10 4 @	<10 @	<10 4 @	<10 @	<10 4 @	<10 4
Aromatics >EC7-EC8	<10 µg/kg	TM089		<10 4 @	<10 @	<10 4 @	<10 @	<10 4 @	<10 4
Aromatics >EC8-EC10	<10 µg/kg	TM089		<10 4 @	<10 @	16.3 4 @	<10 @	10.4 4 @	<10 4
Aromatics > EC10-EC12	<1000 µg/kg	TM414		3780	16400	7970	<1000	1180	4310
Aromatics > EC12-EC16	<1000 µg/kg	TM414		8880	12800	12900	2030	2410	5000
Aromatics > EC16-EC21	<1000 µg/kg	TM414		53100	82600	59300	12600	14300	32000
Aromatics > EC21-EC35	<1000 µg/kg	TM414		93100	211000	135000	49300	36900	74000
Aromatics >EC35-EC44	<1000 µg/kg	TM414		7760	25200	13500	6920	2470	10000
Aromatics > EC40-EC44	<1000 µg/kg	TM414		1790	3860	1910	1510	<1000	1310
Total Aromatics > EC10-EC44	<5000 µg/kg	TM414		167000	348000	228000	71800	57300	125000
Total Aliphatics & Aromatics >C5-C44	<10000 µg/kg	TM414		233000	565000	374000	79000	82200	176000
Total Aliphatics >C5-C10	<50 µg/kg	TM089		52.3 4 @	<50 @	81.5 4 @	<50 @	<50 4 @	<50 4
Total Aromatics >EC5-EC10	<50 µg/kg	TM089		<50 4 @	<50 @	<50 4 @	<50 @	<50 4 @	<50 4
GRO >C5-C10	<20 µg/kg	TM089		52.3 4 @	<20 @	81.5 4 @	<20 @	<20 4 @	<20 4

Validated

CERTIFICATE OF ANALYSIS

SDG:	201215-62	**Client Reference:**	P18-669	**Report Number:**	583598
Location:	Llanwern	**Order Number:**		**Superseded Report:**	583597

VOC MS (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	2BN-1	2BN-2	2BN-3	2BN-4	2BN-5	2BN-6
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	14/12/2020	14/12/2020	14/12/2020	14/12/2020	14/12/2020	14/12/2020
			Sample Time	.	.	.	.	.	.
			Date Received	15/12/2020	15/12/2020	15/12/2020	15/12/2020	15/12/2020	15/12/2020
			SDG Ref	201215-62	201215-62	201215-62	201215-62	201215-62	201215-62
			Lab Sample No.(s)	23432757	23432763	23432768	23432776	23432780	23432790
			AGS Reference						
Dibromofluoromethane**	%	TM116		103 @	95.7 @	95.9 @	108 @	116 @	101 @
Toluene-d8**	%	TM116		93.2 @	90.2 @	92.3 @	94.7 @	97.7 @	91 @
4-Bromofluorobenzene**	%	TM116		86.1 @	78.1 @	83.6 @	87.1 @	98.2 @	76.3 @
Methyl Tertiary Butyl Ether	<10 µg/kg	TM116		<200 @ M	<200 @ M	<200 @ M	<200 @ M	<200 @ M	<200 @ M
Benzene	<9 µg/kg	TM116		<180 @ M	<180 @ M	<180 @ M	<180 @ M	<180 @ M	<180 @ M
Toluene	<7 µg/kg	TM116		<140 @ M	<140 @ M	<140 @ M	<140 @ M	<140 @ M	<140 @ M
Ethylbenzene	<4 µg/kg	TM116		<80 @ M	<80 @ M	<80 @ M	<80 @ M	<80 @ M	<80 @ M
p/m-Xylene	<10 µg/kg	TM116		<200 @ #	<200 @ #	<200 @ #	<200 @ #	<200 @ #	<200 @ #
o-Xylene	<10 µg/kg	TM116		<200 @ M	<200 @ M	<200 @ M	<200 @ M	<200 @ M	<200 @ M
Naphthalene	<13 µg/kg	TM116		<2600 M	835 M	623 M	612 M	<2600 M	<2600 M
Sum of Detected Xylenes	<0.02 mg/kg	TM116		<0.4 @	<0.4 @	<0.4 @	<0.4 @	<0.4 @	<0.4 @
Sum of BTEX	<40 µg/kg	TM116		<800 @	<800 @	<800 @	<800 @	<800 @	<800 @

Validated

CERTIFICATE OF ANALYSIS

SDG:	201215-62	**Client Reference:**	P18-669	**Report Number:**	583598
Location:	Llanwern	**Order Number:**		**Superseded Report:**	583597

VOC MS (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	2BN-7	2BN-8	2BN-9	2BN-10	2BN2-1	2BN2-2
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	14/12/2020	14/12/2020	14/12/2020	14/12/2020	14/12/2020	14/12/2020
			Sample Time	.	.	.	.	.	.
			Date Received	15/12/2020	15/12/2020	15/12/2020	15/12/2020	15/12/2020	15/12/2020
			SDG Ref	201215-62	201215-62	201215-62	201215-62	201215-62	201215-62
			Lab Sample No.(s)	23432795	23432801	23432805	23432810	23432817	23432823
			AGS Reference						
Dibromofluoromethane**	%	TM116		103 @	97.3 @	83.5 @	97.3 @	98.5 @	105 @
Toluene-d8**	%	TM116		92.2 @	88.6 @	87.1 @	97.3 @	95.2 @	91.9 @
4-Bromofluorobenzene**	%	TM116		78.9 @	72.3 @	69.8 @	80.8 @	78.4 @	81.8 @
Methyl Tertiary Butyl Ether	<10 µg/kg	TM116		<200 @ M	<200 @ M	<200 @ M	<200 @ M	<200 @ M	<200 @ M
Benzene	<9 µg/kg	TM116		<180 @ M	<180 @ M	<180 @ M	<180 @ M	<180 @ M	<180 @ M
Toluene	<7 µg/kg	TM116		<140 @ M	<140 @ M	<140 @ M	<140 @ M	<140 @ M	<140 @ M
Ethylbenzene	<4 µg/kg	TM116		<80 @ M	<80 @ M	<80 @ M	<80 @ M	<80 @ M	<80 @ M
p/m-Xylene	<10 µg/kg	TM116		<200 @ #	<200 @ #	<200 @ #	<200 @ #	<200 @ #	<200 @ #
o-Xylene	<10 µg/kg	TM116		<200 @ M	<200 @ M	<200 @ M	<200 @ M	<200 @ M	<200 @ M
Naphthalene	<13 µg/kg	TM116		764 M	708 M	<2600 M	316 M	<2600 M	959 M
Sum of Detected Xylenes	<0.02 mg/kg	TM116		<0.4 @	<0.4 @	<0.4 @	<0.4 @	<0.4 @	<0.4 @
Sum of BTEX	<40 µg/kg	TM116		<800 @	<800 @	<800 @	<800 @	<800 @	<800 @

Validated

CERTIFICATE OF ANALYSIS

SDG:	201215-62	**Client Reference:**	P18-669	**Report Number:**	583598
Location:	Llanwern	**Order Number:**		**Superseded Report:**	583597

VOC MS (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	2BN2-3	2BN2-4	2BN2-5	2BN2-6	2BN2-7	2BN2-12
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	14/12/2020	14/12/2020	14/12/2020	14/12/2020	14/12/2020	14/12/2020
			Sample Time	.	.	.	.	.	.
			Date Received	15/12/2020	15/12/2020	15/12/2020	15/12/2020	15/12/2020	15/12/2020
			SDG Ref	201215-62	201215-62	201215-62	201215-62	201215-62	201215-62
			Lab Sample No.(s)	23432829	23432837	23432845	23432860	23432866	23432871
			AGS Reference						
Dibromofluoromethane**	%	TM116		104 @	98.3 @	98.8 @	103 @	106 @	103 @
Toluene-d8**	%	TM116		92.6 @	93.8 @	94.4 @	94.3 @	96.1 @	94.6 @
4-Bromofluorobenzene**	%	TM116		82.8 @	79.8 @	76.9 @	85 @	84.8 @	85.1 @
Methyl Tertiary Butyl Ether	<10 µg/kg	TM116		<200 @ M	<200 @ M	<200 @ M	<200 @ M	<200 @ M	<200 @ M
Benzene	<9 µg/kg	TM116		<180 @ M	<180 @ M	<180 @ M	<180 @ M	<180 @ M	<180 @ M
Toluene	<7 µg/kg	TM116		<140 @ M	<140 @ M	<140 @ M	<140 @ M	<140 @ M	<140 @ M
Ethylbenzene	<4 µg/kg	TM116		<80 @ M	<80 @ M	<80 @ M	<80 @ M	<80 @ M	<80 @ M
p/m-Xylene	<10 µg/kg	TM116		<200 @ #	<200 @ #	<200 @ #	<200 @ #	<200 @ #	<200 @ #
o-Xylene	<10 µg/kg	TM116		<200 @ M	<200 @ M	<200 @ M	<200 @ M	<200 @ M	<200 @ M
Naphthalene	<13 µg/kg	TM116		841 M	<2600 M	2800 M	1170 M	<2600 M	4710 M
Sum of Detected Xylenes	<0.02 mg/kg	TM116		<0.4 @	<0.4 @	<0.4 @	<0.4 @	<0.4 @	<0.4 @
Sum of BTEX	<40 µg/kg	TM116		<800 @	<800 @	<800 @	<800 @	<800 @	<800 @

Validated

CERTIFICATE OF ANALYSIS

SDG:	201215-62	**Client Reference:**	P18-669	**Report Number:**	583598
Location:	Llanwern	**Order Number:**		**Superseded Report:**	583597

VOC MS (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	2BN2-13	2BN2-14	2BN2-15	2BN2-16	2BN2-17	2BN2-18
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	14/12/2020	14/12/2020	14/12/2020	14/12/2020	14/12/2020	14/12/2020
			Sample Time	.	.	.	.	.	.
			Date Received	15/12/2020	15/12/2020	15/12/2020	15/12/2020	15/12/2020	15/12/2020
			SDG Ref	201215-62	201215-62	201215-62	201215-62	201215-62	201215-62
			Lab Sample No.(s)	23432875	23432880	23432885	23432889	23432897	23432910
			AGS Reference						
Dibromofluoromethane**	%	TM116		94.5 @	106 @	95.4 @	96.8 @	118 @	99.2 @
Toluene-d8**	%	TM116		94.9 @	94.1 @	91.3 @	94.8 @	89.6 @	93.3 @
4-Bromofluorobenzene**	%	TM116		83.8 @	87.6 @	84.7 @	80.9 @	93.6 @	79.4 @
Methyl Tertiary Butyl Ether	<10 µg/kg	TM116		<200 @ M	<200 @ M	<200 @ M	<200 @ M	<200 @ M	<200 @ M
Benzene	<9 µg/kg	TM116		<180 @ M	<180 @ M	<180 @ M	<180 @ M	<180 @ M	<180 @ M
Toluene	<7 µg/kg	TM116		<140 @ M	<140 @ M	<140 @ M	<140 @ M	<140 @ M	<140 @ M
Ethylbenzene	<4 µg/kg	TM116		<80 @ M	<80 @ M	<80 @ M	<80 @ M	<80 @ M	<80 @ M
p/m-Xylene	<10 µg/kg	TM116		<200 @ #	<200 @ #	<200 @ #	<200 @ #	<200 @ #	<200 @ #
o-Xylene	<10 µg/kg	TM116		<200 @ M	<200 @ M	<200 @ M	<200 @ M	<200 @ M	<200 @ M
Naphthalene	<13 µg/kg	TM116		3520 M	538 M	810 M	3420 M	1140 M	5390 M
Sum of Detected Xylenes	<0.02 mg/kg	TM116		<0.4 @	<0.4 @	<0.4 @	<0.4 @	<0.4 @	<0.4 @
Sum of BTEX	<40 µg/kg	TM116		<800 @	<800 @	<800 @	<800 @	<800 @	<800 @

Validated

CERTIFICATE OF ANALYSIS

SDG:	201215-62	**Client Reference:**	P18-669	**Report Number:**	583598
Location:	Llanwern	**Order Number:**		**Superseded Report:**	583597

VOC MS (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	2BN2-19	2BN2-20	2BN2-21	2BN2-22	2BN2-23	2BN2-24
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	14/12/2020	14/12/2020	14/12/2020	14/12/2020	14/12/2020	14/12/2020
			Sample Time	.	.	.	.	.	.
			Date Received	15/12/2020	15/12/2020	15/12/2020	15/12/2020	15/12/2020	15/12/2020
			SDG Ref	201215-62	201215-62	201215-62	201215-62	201215-62	201215-62
			Lab Sample No.(s)	23432918	23432941	23432949	23432955	23432959	23432963
			AGS Reference						
Dibromofluoromethane**	%	TM116		98.1 @	98.5 @	94 @	96.9 @	94.9 @	96.5 @
Toluene-d8**	%	TM116		93.5 @	94.2 @	94.4 @	95.7 @	97.4 @	95 @
4-Bromofluorobenzene**	%	TM116		80 @	82.1 @	79.9 @	85.6 @	76.4 @	83.4 @
Methyl Tertiary Butyl Ether	<10 µg/kg	TM116		<200 @ M	<200 @ M	<200 @ M	<200 @ M	<200 @ M	<200 @ M
Benzene	<9 µg/kg	TM116		<180 @ M	<180 @ M	<180 @ M	<180 @ M	<180 @ M	<180 @ M
Toluene	<7 µg/kg	TM116		<140 @ M	<140 @ M	<140 @ M	<140 @ M	<140 @ M	<140 @ M
Ethylbenzene	<4 µg/kg	TM116		<80 @ M	<80 @ M	<80 @ M	<80 @ M	<80 @ M	<80 @ M
p/m-Xylene	<10 µg/kg	TM116		<200 @ #	<200 @ #	<200 @ #	<200 @ #	<200 @ #	<200 @ #
o-Xylene	<10 µg/kg	TM116		<200 @ M	<200 @ M	<200 @ M	<200 @ M	<200 @ M	<200 @ M
Naphthalene	<13 µg/kg	TM116		598 M	8040 M	2120 M	6570 M	5320 M	1210 M
Sum of Detected Xylenes	<0.02 mg/kg	TM116		<0.4 @	<0.4 @	<0.4 @	<0.4 @	<0.4 @	<0.4 @
Sum of BTEX	<40 µg/kg	TM116		<800 @	<800 @	<800 @	<800 @	<800 @	<800 @

Validated

CERTIFICATE OF ANALYSIS

SDG:	201215-62	**Client Reference:**	P18-669	**Report Number:**	583598
Location:	Llanwern	**Order Number:**		**Superseded Report:**	583597

VOC MS (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	2BN2-25	2BN2-26	2BN2-27	2BN2-28	2BSE-15	2BSE-16
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	14/12/2020	14/12/2020	14/12/2020	14/12/2020	11/12/2020	11/12/2020
			Sample Time	.	.	.	.	.	.
			Date Received	15/12/2020	15/12/2020	15/12/2020	15/12/2020	15/12/2020	15/12/2020
			SDG Ref	201215-62	201215-62	201215-62	201215-62	201215-62	201215-62
			Lab Sample No.(s)	23432967	23432973	23432977	23432981	23432722	23432786
			AGS Reference						
Dibromofluoromethane**	%	TM116		95.5 @	116 @	97.7 @	102 @	104 @	97.3 @
Toluene-d8**	%	TM116		91.5 @	89.9 @	95 @	91.7 @	97 @	91.1 @
4-Bromofluorobenzene**	%	TM116		74.1 @	82.9 @	85.6 @	81.3 @	86.7 @	77.5 @
Methyl Tertiary Butyl Ether	<10 µg/kg	TM116		<200 @ M	<200 @ M	<200 @ M	<200 @ M	<200 @ M	<200 @ M
Benzene	<9 µg/kg	TM116		<180 @ M	<180 @ M	<180 @ M	<180 @ M	<180 @ M	<180 @ M
Toluene	<7 µg/kg	TM116		<140 @ M	<140 @ M	<140 @ M	<140 @ M	<140 @ M	<140 @ M
Ethylbenzene	<4 µg/kg	TM116		<80 @ M	<80 @ M	<80 @ M	<80 @ M	<80 @ M	<80 @ M
p/m-Xylene	<10 µg/kg	TM116		<200 @ #	<200 @ #	<200 @ #	<200 @ #	<200 @ #	<200 @ #
o-Xylene	<10 µg/kg	TM116		<200 @ M	<200 @ M	<200 @ M	<200 @ M	<200 @ M	<200 @ M
Naphthalene	<13 µg/kg	TM116		703 M	897 M	757 M	571 M	<260 M	<2600 M
Sum of Detected Xylenes	<0.02 mg/kg	TM116		<0.4 @	<0.4 @	<0.4 @	<0.4 @	<0.4 @	<0.4 @
Sum of BTEX	<40 µg/kg	TM116		<800 @	<800 @	<800 @	<800 @	<800 @	<800 @

Validated

CERTIFICATE OF ANALYSIS

SDG:	201215-62	**Client Reference:**	P18-669	**Report Number:**	583598
Location:	Llanwern	**Order Number:**		**Superseded Report:**	583597

VOC MS (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	2BSE-17	2BSE-18	2BSE-19	2BSE-20	2BSE-21	2BSE-36
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	11/12/2020	11/12/2020	11/12/2020	11/12/2020	11/12/2020	11/12/2020
			Sample Time	.	.	.	.	.	.
			Date Received	15/12/2020	15/12/2020	15/12/2020	15/12/2020	15/12/2020	15/12/2020
			SDG Ref	201215-62	201215-62	201215-62	201215-62	201215-62	201215-62
			Lab Sample No.(s)	23432853	23432930	23432986	23432990	23432994	23433001
			AGS Reference						
Dibromofluoromethane**	%	TM116		108 @	97.7 @	109 @	97.6 @	93.3 @	98.8 @
Toluene-d8**	%	TM116		97.6 @	91.5 @	96.1 @	94.9 @	91.9 @	93.4 @
4-Bromofluorobenzene**	%	TM116		92.4 @	77 @	89.1 @	84.1 @	78.4 @	80.5 @
Methyl Tertiary Butyl Ether	<10 µg/kg	TM116		<200 @ M	<200 @ M	<200 @ M	<200 @ M	<200 @ M	<200 @ M
Benzene	<9 µg/kg	TM116		<180 @ M	<180 @ M	<180 @ M	<180 @ M	<180 @ M	<180 @ M
Toluene	<7 µg/kg	TM116		<140 @ M	<140 @ M	<140 @ M	<140 @ M	<140 @ M	<140 @ M
Ethylbenzene	<4 µg/kg	TM116		<80 @ M	<80 @ M	<80 @ M	<80 @ M	<80 @ M	<80 @ M
p/m-Xylene	<10 µg/kg	TM116		<200 @ #	<200 @ #	<200 @ #	<200 @ #	<200 @ #	<200 @ #
o-Xylene	<10 µg/kg	TM116		<200 @ M	<200 @ M	<200 @ M	<200 @ M	<200 @ M	<200 @ M
Naphthalene	<13 µg/kg	TM116		791 M	6860 M	<260 M	<2600 M	3130 M	407 M
Sum of Detected Xylenes	<0.02 mg/kg	TM116		<0.4 @	<0.4 @	<0.4 @	<0.4 @	<0.4 @	<0.4 @
Sum of BTEX	<40 µg/kg	TM116		<800 @	<800 @	<800 @	<800 @	<800 @	<800 @

Validated

CERTIFICATE OF ANALYSIS

SDG:	201215-62	**Client Reference:**	P18-669	**Report Number:**	583598
Location:	Llanwern	**Order Number:**		**Superseded Report:**	583597

VOC MS (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	2BSE-37	2BSE-38	2BSE-39	2BSE-40	2BSE-41	2BSE-42
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	11/12/2020	11/12/2020	11/12/2020	11/12/2020	11/12/2020	11/12/2020
			Sample Time	.	.	.	.	.	.
			Date Received	15/12/2020	15/12/2020	15/12/2020	15/12/2020	15/12/2020	15/12/2020
			SDG Ref	201215-62	201215-62	201215-62	201215-62	201215-62	201215-62
			Lab Sample No.(s)	23433006	23432728	23432735	23432740	23432745	23432753
			AGS Reference						
Dibromofluoromethane**	%	TM116		99.1 @	105 @	99.4 @	106 @	107 @	95 @
Toluene-d8**	%	TM116		94.6 @	99.3 @	93.8 @	96.8 @	96.5 @	91.8 @
4-Bromofluorobenzene**	%	TM116		77.9 @	91 @	82.7 @	90.1 @	87.4 @	78 @
Methyl Tertiary Butyl Ether	<10 µg/kg	TM116		<200 @ M	<200 @ M	<200 @ M	<200 @ M	<200 @ M	<200 @ M
Benzene	<9 µg/kg	TM116		<180 @ M	<180 @ M	<180 @ M	<180 @ M	<180 @ M	<180 @ M
Toluene	<7 µg/kg	TM116		<140 @ M	<140 @ M	<140 @ M	<140 @ M	<140 @ M	<140 @ M
Ethylbenzene	<4 µg/kg	TM116		<80 @ M	<80 @ M	<80 @ M	<80 @ M	<80 @ M	<80 @ M
p/m-Xylene	<10 µg/kg	TM116		<200 @ #	<200 @ #	<200 @ #	<200 @ #	<200 @ #	<200 @ #
o-Xylene	<10 µg/kg	TM116		<200 @ M	<200 @ M	<200 @ M	<200 @ M	<200 @ M	<200 @ M
Naphthalene	<13 µg/kg	TM116		<2600 M	831 M	<2600 M	295 M	<260 M	615 M
Sum of Detected Xylenes	<0.02 mg/kg	TM116		<0.4 @	<0.4 @	<0.4 @	<0.4 @	<0.4 @	<0.4 @
Sum of BTEX	<40 µg/kg	TM116		<800 @	<800 @	<800 @	<800 @	<800 @	<800 @

CERTIFICATE OF ANALYSIS

SDG:	201215-62	**Client Reference:**	P18-669	**Report Number:**	583598
Location:	Llanwern	**Order Number:**		**Superseded Report:**	583597

Asbestos Identification - Solid Samples

Results Legend

#	ISO17025 accredited.
M	*m*CERTS accredited.
*	Subcontracted test.
(F)	Trigger breach confirmed
1-5&♦§@	Sample deviation (see appendix)

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthophyllite	Fibrous Tremolite	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	2BN-1 0.00 - 0.00 SOLID 14/12/2020 00:00:00 15/12/2020 05:00:00 201215-62 23432757 TM048	22/12/2020	Marcin Magdziarek	Loose fibres in soil	Not Detected (#)	Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	2BN-3 0.00 - 0.00 SOLID 14/12/2020 00:00:00 15/12/2020 05:00:00 201215-62 23432768 TM048	22/12/2020	Agnieszka Chelmowska	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	2BN-5 0.00 - 0.00 SOLID 14/12/2020 00:00:00 15/12/2020 05:00:00 201215-62 23432780 TM048	21/12/20	Andrzej Ferfecki	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	2BN-7 0.00 - 0.00 SOLID 14/12/2020 00:00:00 15/12/2020 05:00:00 201215-62 23432795 TM048	21/12/20	Andrzej Ferfecki	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	2BN-9 0.00 - 0.00 SOLID 14/12/2020 00:00:00 15/12/2020 05:00:00 201215-62 23432805 TM048	22/12/2020	Agnieszka Chelmowska	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	2BN2-1 0.00 - 0.00 SOLID 14/12/2020 00:00:00 15/12/2020 05:00:00 201215-62 23432817 TM048	22/12/2020	Barbara Urbanek-Walsh	Loose fibres in soil.	Not Detected (#)	Trace (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	2BN2-3 0.00 - 0.00 SOLID 14/12/2020 00:00:00 15/12/2020 05:00:00 201215-62 23432829 TM048	22/12/2020	Barbara Urbanek-Walsh	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	2BN2-5 0.00 - 0.00 SOLID 14/12/2020 00:00:00 15/12/2020 05:00:00 201215-62 23432845 TM048	22/12/2020	Barbara Urbanek-Walsh	Loose fibres in soil.	Not Detected (#)	Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected

CERTIFICATE OF ANALYSIS

SDG:	201215-62	**Client Reference:**	P18-669	**Report Number:**	583598
Location:	Llanwern	**Order Number:**		**Superseded Report:**	583597

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthophyllite	Fibrous Tremolite	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	2BN2-7 0.00 - 0.00 SOLID 14/12/2020 00:00:00 15/12/2020 05:00:00 201215-62 23432866 TM048	22/12/2020	Agnieszka Chelmowska	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	2BN2-13 0.00 - 0.00 SOLID 14/12/2020 00:00:00 15/12/2020 05:00:00 201215-62 23432875 TM048	22/12/2020	Marcin Magdziarek	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	2BN2-15 0.00 - 0.00 SOLID 14/12/2020 00:00:00 15/12/2020 05:00:00 201215-62 23432885 TM048	22/12/2020	Marcin Magdziarek	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	2BN2-17 0.00 - 0.00 SOLID 14/12/2020 00:00:00 15/12/2020 05:00:00 201215-62 23432897 TM048	22/12/2020	Marcin Magdziarek	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	2BN2-19 0.00 - 0.00 SOLID 14/12/2020 00:00:00 15/12/2020 05:00:00 201215-62 23432918 TM048	22/12/2020	Barbara Urbanek-Walsh	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	2BN2-21 0.00 - 0.00 SOLID 14/12/2020 00:00:00 15/12/2020 05:00:00 201215-62 23432949 TM048	22/12/2020	Barbara Urbanek-Walsh	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	2BN2-23 0.00 - 0.00 SOLID 14/12/2020 00:00:00 15/12/2020 05:00:00 201215-62 23432959 TM048	22/12/20	Andrzej Ferfecki	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	2BN2-25 0.00 - 0.00 SOLID 14/12/2020 00:00:00 15/12/2020 05:00:00 201215-62 23432967 TM048	22/12/2020	Agnieszka Chelmowska	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	2BN2-27 0.00 - 0.00 SOLID 14/12/2020 00:00:00 15/12/2020 05:00:00 201215-62 23432977 TM048	22/12/2020	Agnieszka Chelmowska	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected

Validated

CERTIFICATE OF ANALYSIS

SDG:	201215-62	**Client Reference:**	P18-669	**Report Number:**	583598
Location:	Llanwern	**Order Number:**		**Superseded Report:**	583597

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthophyllite	Fibrous Tremolite	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	2BSE-15 0.00 - 0.00 SOLID 11/12/2020 00:00:00 15/12/2020 05:00:00 201215-62 23432722 TM048	22/12/20	Andrzej Ferfecki	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	2BSE-17 0.00 - 0.00 SOLID 11/12/2020 00:00:00 15/12/2020 05:00:00 201215-62 23432853 TM048	22/12/2020	Marcin Magdziarek	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	2BSE-19 0.00 - 0.00 SOLID 11/12/2020 00:00:00 15/12/2020 05:00:00 201215-62 23432986 TM048	22/12/2020	Barbara Urbanek-Walsh	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	2BSE-21 0.00 - 0.00 SOLID 11/12/2020 00:00:00 15/12/2020 05:00:00 201215-62 23432994 TM048	22/12/20	Andrzej Ferfecki	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	2BSE-37 0.00 - 0.00 SOLID 11/12/2020 00:00:00 15/12/2020 05:00:00 201215-62 23433006 TM048	22/12/2020	Marcin Magdziarek	Loose fibres in soil	Not Detected (#)	Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	2BSE-39 0.00 - 0.00 SOLID 11/12/2020 00:00:00 15/12/2020 05:00:00 201215-62 23432735 TM048	22/12/2020	Barbara Urbanek-Walsh	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	2BSE-41 0.00 - 0.00 SOLID 11/12/2020 00:00:00 15/12/2020 05:00:00 201215-62 23432745 TM048	22/12/2020	Agnieszka Chelmowska	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected

CERTIFICATE OF ANALYSIS

SDG:	201215-62	**Client Reference:**	P18-669	**Report Number:**	583598
Location:	Llanwern	**Order Number:**		**Superseded Report:**	583597

Table of Results - Appendix

Method No	Reference	Description
PM024	Modified BS 1377	Soil preparation including homogenisation, moisture screens of soils for Asbestos Containing Material
SUB		Subcontracted Test
TM024	Method 4500A & B, AWWA/APHA, 20th Ed., 1999	Determination of Exchangeable Ammonium and Ammoniacal Nitrogen as N by titration on solids
TM048	HSG 248, Asbestos: The analysts' guide for sampling, analysis and clearance procedures	Identification of Asbestos in Bulk Material
TM062 (S)	National Grid Property Holdings Methods for the Collection & Analysis of Samples from National Grid Sites version 1 Sec 3.9	Determination of Phenols in Soils by HPLC
TM089	Modified: US EPA Methods 8020 & 602	Determination of Gasoline Range Hydrocarbons (GRO) by Headspace GC-FID (C4-C12)
TM116	Modified: US EPA Method 8260, 8120, 8020, 624, 610 & 602	Determination of Volatile Organic Compounds by Headspace / GC-MS
TM132	In - house Method	ELTRA CS800 Operators Guide
TM133	BS 1377: Part 3 1990;BS 6068-2.5	Determination of pH in Soil and Water using the GLpH pH Meter
TM153	Method 4500A,B,C, I, M AWWA/APHA, 20th Ed., 1999	Determination of Total Cyanide, Free (Easily Liberatable) Cyanide and Thiocyanate using the Skalar SANS+ System Segmented Flow Analyser
TM181	US EPA Method 6010B	Determination of Routine Metals in Soil by iCap 6500 Duo ICP-OES
TM218	Shaker extraction - EPA method 3546.	The determination of PAH in soil samples by GC-MS
TM414	Analysis of Petroleum Hydrocarbons in Environmental Media – Total Petroleum Hydrocarbon Criteria	Determination of Speciated Extractable Petroleum Hydrocarbons in Soils by GCxGC-FID

NA = not applicable.

Chemical testing (unless subcontracted) performed at ALS Life Sciences Ltd Hawarden (Method codes TM) or ALS Life Sciences Ltd Aberdeen (Method codes S).

CERTIFICATE OF ANALYSIS

SDG:	201215-62	**Client Reference:**	P18-669	**Report Number:**	583598
Location:	Llanwern	**Order Number:**		**Superseded Report:**	583597

Test Completion Dates

Lab Sample No(s)	23432757	23432763	23432768	23432776	23432780	23432790	23432795	23432801	23432805	23432810
Customer Sample Ref.	2BN-1	2BN-2	2BN-3	2BN-4	2BN-5	2BN-6	2BN-7	2BN-8	2BN-9	2BN-10
AGS Ref.										
Depth	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
Ammonium Soil by Titration	22-Dec-2020	22-Dec-2020	22-Dec-2020	22-Dec-2020	22-Dec-2020	18-Dec-2020	22-Dec-2020	22-Dec-2020	22-Dec-2020	22-Dec-2020
Asbestos ID in Solid Samples	22-Dec-2020		22-Dec-2020		21-Dec-2020		21-Dec-2020		22-Dec-2020	
Cyanide Comp/Free/Total/Thiocyanate	18-Dec-2020	18-Dec-2020	18-Dec-2020	18-Dec-2020	18-Dec-2020	18-Dec-2020	18-Dec-2020	18-Dec-2020	18-Dec-2020	18-Dec-2020
EPH CWG GC (S)	13-Jan-2021	11-Jan-2021	15-Jan-2021	11-Jan-2021	13-Jan-2021	13-Jan-2021	11-Jan-2021	13-Jan-2021	12-Jan-2021	13-Jan-2021
GRO by GC-FID (S)	11-Jan-2021	12-Jan-2021	12-Jan-2021	12-Jan-2021	07-Jan-2021	13-Jan-2021	12-Jan-2021	12-Jan-2021	12-Jan-2021	13-Jan-2021
Metals in solid samples by OES	13-Jan-2021	22-Dec-2020	22-Dec-2020	13-Jan-2021	22-Dec-2020	13-Jan-2021	13-Jan-2021	22-Dec-2020	21-Dec-2020	13-Jan-2021
PAH by GCMS	17-Dec-2020	19-Dec-2020	17-Dec-2020	17-Dec-2020	19-Dec-2020	17-Dec-2020	17-Dec-2020	17-Dec-2020	17-Dec-2020	17-Dec-2020
pH	18-Dec-2020	17-Dec-2020	18-Dec-2020	17-Dec-2020	18-Dec-2020	17-Dec-2020	18-Dec-2020	16-Dec-2020	18-Dec-2020	16-Dec-2020
Phenols by HPLC (S)	20-Dec-2020	18-Dec-2020	18-Dec-2020	18-Dec-2020	18-Dec-2020	18-Dec-2020	20-Dec-2020	18-Dec-2020	20-Dec-2020	18-Dec-2020
Sample description	16-Dec-2020	16-Dec-2020	16-Dec-2020	16-Dec-2020	16-Dec-2020	16-Dec-2020	16-Dec-2020	16-Dec-2020	16-Dec-2020	16-Dec-2020
Total Organic Carbon	22-Dec-2020	22-Dec-2020	22-Dec-2020	22-Dec-2020	22-Dec-2020	22-Dec-2020	22-Dec-2020	22-Dec-2020	22-Dec-2020	22-Dec-2020
TPH CWG GC (S)	13-Jan-2021	12-Jan-2021	15-Jan-2021	12-Jan-2021	13-Jan-2021	13-Jan-2021	12-Jan-2021	13-Jan-2021	12-Jan-2021	13-Jan-2021
VOC MS (S)	08-Jan-2021	11-Jan-2021	11-Jan-2021	11-Jan-2021	07-Jan-2021	11-Jan-2021	11-Jan-2021	11-Jan-2021	11-Jan-2021	11-Jan-2021

Lab Sample No(s)	23432817	23432823	23432829	23432837	23432845	23432860	23432866	23432871	23432875	23432880
Customer Sample Ref.	2BN2-1	2BN2-2	2BN2-3	2BN2-4	2BN2-5	2BN2-6	2BN2-7	2BN2-12	2BN2-13	2BN2-14
AGS Ref.										
Depth	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
Ammonium Soil by Titration	22-Dec-2020	22-Dec-2020	22-Dec-2020	22-Dec-2020	22-Dec-2020	22-Dec-2020	22-Dec-2020	22-Dec-2020	22-Dec-2020	22-Dec-2020
Asbestos ID in Solid Samples	22-Dec-2020		22-Dec-2020		22-Dec-2020		22-Dec-2020		22-Dec-2020	
Cyanide Comp/Free/Total/Thiocyanate	17-Dec-2020	18-Dec-2020	17-Dec-2020	22-Dec-2020	22-Dec-2020	22-Dec-2020	18-Dec-2020	22-Dec-2020	18-Dec-2020	21-Dec-2020
EPH CWG GC (S)	14-Jan-2021	08-Jan-2021	08-Jan-2021	15-Jan-2021	08-Jan-2021	07-Jan-2021	08-Jan-2021	11-Jan-2021	08-Jan-2021	13-Jan-2021
GRO by GC-FID (S)	19-Jan-2021	12-Jan-2021	12-Jan-2021	19-Jan-2021	15-Jan-2021	19-Jan-2021	15-Jan-2021	18-Jan-2021	18-Jan-2021	12-Jan-2021
Metals in solid samples by OES	21-Dec-2020	13-Jan-2021	22-Dec-2020	21-Dec-2020	21-Dec-2020	22-Dec-2020	22-Dec-2020	22-Dec-2020	13-Jan-2021	13-Jan-2021
PAH by GCMS	22-Dec-2020	22-Dec-2020	17-Dec-2020	22-Dec-2020	22-Dec-2020	17-Dec-2020	22-Dec-2020	17-Dec-2020	19-Dec-2020	17-Dec-2020
pH	18-Dec-2020	16-Dec-2020	18-Dec-2020	16-Dec-2020	18-Dec-2020	16-Dec-2020	18-Dec-2020	16-Dec-2020	18-Dec-2020	17-Dec-2020
Phenols by HPLC (S)	20-Dec-2020	17-Dec-2020	18-Dec-2020	18-Dec-2020	17-Dec-2020	18-Dec-2020	17-Dec-2020	18-Dec-2020	20-Dec-2020	20-Dec-2020
Sample description	15-Dec-2020	15-Dec-2020	15-Dec-2020	15-Dec-2020	15-Dec-2020	15-Dec-2020	15-Dec-2020	15-Dec-2020	16-Dec-2020	16-Dec-2020
Total Organic Carbon	22-Dec-2020	22-Dec-2020	22-Dec-2020	22-Dec-2020	22-Dec-2020	22-Dec-2020	22-Dec-2020	22-Dec-2020	22-Dec-2020	22-Dec-2020
TPH CWG GC (S)	19-Jan-2021	12-Jan-2021	12-Jan-2021	19-Jan-2021	15-Jan-2021	19-Jan-2021	15-Jan-2021	18-Jan-2021	18-Jan-2021	13-Jan-2021
VOC MS (S)	15-Jan-2021	11-Jan-2021	11-Jan-2021	15-Jan-2021	14-Jan-2021	14-Jan-2021	14-Jan-2021	14-Jan-2021	14-Jan-2021	11-Jan-2021

Lab Sample No(s)	23432885	23432889	23432897	23432910	23432918	23432941	23432949	23432955	23432959	23432963
Customer Sample Ref.	2BN2-15	2BN2-16	2BN2-17	2BN2-18	2BN2-19	2BN2-20	2BN2-21	2BN2-22	2BN2-23	2BN2-24
AGS Ref.										
Depth	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
Ammonium Soil by Titration	22-Dec-2020	22-Dec-2020	22-Dec-2020	22-Dec-2020	22-Dec-2020	22-Dec-2020	22-Dec-2020	22-Dec-2020	22-Dec-2020	22-Dec-2020
Asbestos ID in Solid Samples	22-Dec-2020		22-Dec-2020		22-Dec-2020		22-Dec-2020		22-Dec-2020	
Cyanide Comp/Free/Total/Thiocyanate	17-Dec-2020	21-Dec-2020	18-Dec-2020	22-Dec-2020	22-Dec-2020	22-Dec-2020	21-Dec-2020	22-Dec-2020	22-Dec-2020	22-Dec-2020
EPH CWG GC (S)	14-Jan-2021	08-Jan-2021	15-Jan-2021	14-Jan-2021	08-Jan-2021	08-Jan-2021	07-Jan-2021	14-Jan-2021	13-Jan-2021	08-Jan-2021
GRO by GC-FID (S)	12-Jan-2021	18-Jan-2021	12-Jan-2021	15-Jan-2021	19-Jan-2021	18-Jan-2021	19-Jan-2021	18-Jan-2021	19-Jan-2021	18-Jan-2021
Metals in solid samples by OES	21-Dec-2020	13-Jan-2021	13-Jan-2021	22-Dec-2020	21-Dec-2020	22-Dec-2020	22-Dec-2020	21-Dec-2020	21-Dec-2020	22-Dec-2020
PAH by GCMS	22-Dec-2020	17-Dec-2020	17-Dec-2020	23-Dec-2020	22-Dec-2020	22-Dec-2020	17-Dec-2020	22-Dec-2020	17-Dec-2020	17-Dec-2020
pH	18-Dec-2020	17-Dec-2020	18-Dec-2020	16-Dec-2020	18-Dec-2020	16-Dec-2020	18-Dec-2020	16-Dec-2020	18-Dec-2020	16-Dec-2020
Phenols by HPLC (S)	22-Dec-2020	20-Dec-2020	18-Dec-2020	17-Dec-2020	17-Dec-2020	18-Dec-2020	20-Dec-2020	18-Dec-2020	17-Dec-2020	17-Dec-2020
Sample description	15-Dec-2020	16-Dec-2020	16-Dec-2020	15-Dec-2020	15-Dec-2020	15-Dec-2020	15-Dec-2020	15-Dec-2020	15-Dec-2020	15-Dec-2020
Total Organic Carbon	22-Dec-2020	22-Dec-2020	22-Dec-2020	22-Dec-2020	22-Dec-2020	22-Dec-2020	22-Dec-2020	22-Dec-2020	22-Dec-2020	22-Dec-2020
TPH CWG GC (S)	14-Jan-2021	18-Jan-2021	15-Jan-2021	15-Jan-2021	19-Jan-2021	18-Jan-2021	19-Jan-2021	18-Jan-2021	19-Jan-2021	18-Jan-2021
VOC MS (S)	11-Jan-2021	14-Jan-2021	11-Jan-2021	13-Jan-2021	14-Jan-2021	14-Jan-2021	15-Jan-2021	14-Jan-2021	15-Jan-2021	14-Jan-2021

Validated

CERTIFICATE OF ANALYSIS

SDG:	201215-62	**Client Reference:**	P18-669	**Report Number:**	583598
Location:	Llanwern	**Order Number:**		**Superseded Report:**	583597

Lab Sample No(s)	23432967	23432973	23432977	23432981	23432722	23432786	23432853	23432930	23432986	23432990
Customer Sample Ref.	2BN2-25	2BN2-26	2BN2-27	2BN2-28	2BSE-15	2BSE-16	2BSE-17	2BSE-18	2BSE-19	2BSE-20
AGS Ref.										
Depth	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
Ammonium Soil by Titration	22-Dec-2020	22-Dec-2020	22-Dec-2020	22-Dec-2020	22-Dec-2020	22-Dec-2020	22-Dec-2020	22-Dec-2020	22-Dec-2020	22-Dec-2020
Asbestos ID in Solid Samples	22-Dec-2020		22-Dec-2020		22-Dec-2020		22-Dec-2020		22-Dec-2020	
Calorific Value (S)*					04-Jan-2021	04-Jan-2021	04-Jan-2021	04-Jan-2021	04-Jan-2021	04-Jan-2021
Cyanide Comp/Free/Total/Thiocyanate	18-Dec-2020	21-Dec-2020	18-Dec-2020	17-Dec-2020	22-Dec-2020	18-Dec-2020	17-Dec-2020	17-Dec-2020	17-Dec-2020	17-Dec-2020
EPH CWG GC (S)	07-Jan-2021	11-Jan-2021	08-Jan-2021	08-Jan-2021	11-Jan-2021	11-Jan-2021	15-Jan-2021	08-Jan-2021	08-Jan-2021	08-Jan-2021
GRO by GC-FID (S)	19-Jan-2021	12-Jan-2021	18-Jan-2021	12-Jan-2021	15-Jan-2021	15-Jan-2021	15-Jan-2021	15-Jan-2021	19-Jan-2021	18-Jan-2021
Metals in solid samples by OES	21-Dec-2020	13-Jan-2021	13-Jan-2021	22-Dec-2020	22-Dec-2020	22-Dec-2020	21-Dec-2020	22-Dec-2020	21-Dec-2020	22-Dec-2020
PAH by GCMS	17-Dec-2020	17-Dec-2020	17-Dec-2020	17-Dec-2020	22-Dec-2020	22-Dec-2020	22-Dec-2020	22-Dec-2020	17-Dec-2020	21-Dec-2020
pH	18-Dec-2020	17-Dec-2020	18-Dec-2020	16-Dec-2020	18-Dec-2020	16-Dec-2020	18-Dec-2020	16-Dec-2020	18-Dec-2020	16-Dec-2020
Phenols by HPLC (S)	18-Dec-2020	18-Dec-2020	20-Dec-2020	17-Dec-2020	17-Dec-2020	20-Dec-2020	17-Dec-2020	17-Dec-2020	20-Dec-2020	21-Dec-2020
Sample description	15-Dec-2020	16-Dec-2020	16-Dec-2020	15-Dec-2020	15-Dec-2020	15-Dec-2020	15-Dec-2020	15-Dec-2020	15-Dec-2020	15-Dec-2020
Total Organic Carbon	22-Dec-2020	22-Dec-2020	22-Dec-2020	22-Dec-2020	22-Dec-2020	21-Dec-2020	22-Dec-2020	22-Dec-2020	22-Dec-2020	22-Dec-2020
TPH CWG GC (S)	19-Jan-2021	12-Jan-2021	18-Jan-2021	12-Jan-2021	15-Jan-2021	15-Jan-2021	15-Jan-2021	15-Jan-2021	19-Jan-2021	18-Jan-2021
VOC MS (S)	15-Jan-2021	11-Jan-2021	14-Jan-2021	11-Jan-2021	14-Jan-2021	13-Jan-2021	14-Jan-2021	13-Jan-2021	14-Jan-2021	14-Jan-2021

Lab Sample No(s)	23432994	23433001	23433006	23432728	23432735	23432740	23432745	23432753
Customer Sample Ref.	2BSE-21	2BSE-36	2BSE-37	2BSE-38	2BSE-39	2BSE-40	2BSE-41	2BSE-42
AGS Ref.								
Depth	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
Ammonium Soil by Titration	22-Dec-2020	22-Dec-2020	22-Dec-2020	22-Dec-2020	22-Dec-2020	22-Dec-2020	22-Dec-2020	22-Dec-2020
Asbestos ID in Solid Samples	22-Dec-2020		22-Dec-2020		22-Dec-2020		22-Dec-2020	
Calorific Value (S)*	04-Jan-2021							
Cyanide Comp/Free/Total/Thiocyanate	17-Dec-2020	21-Dec-2020	17-Dec-2020	21-Dec-2020	17-Dec-2020	22-Dec-2020	21-Dec-2020	22-Dec-2020
EPH CWG GC (S)	07-Jan-2021	11-Jan-2021	07-Jan-2021	07-Jan-2021	07-Jan-2021	08-Jan-2021	08-Jan-2021	13-Jan-2021
GRO by GC-FID (S)	18-Jan-2021	15-Jan-2021	19-Jan-2021	11-Jan-2021	15-Jan-2021	15-Jan-2021	19-Jan-2021	19-Jan-2021
Metals in solid samples by OES	21-Dec-2020	21-Dec-2020	21-Dec-2020	21-Dec-2020	21-Dec-2020	22-Dec-2020	22-Dec-2020	22-Dec-2020
PAH by GCMS	21-Dec-2020	22-Dec-2020	22-Dec-2020	22-Dec-2020	22-Dec-2020	17-Dec-2020	21-Dec-2020	21-Dec-2020
pH	18-Dec-2020	16-Dec-2020	18-Dec-2020	16-Dec-2020	18-Dec-2020	16-Dec-2020	18-Dec-2020	16-Dec-2020
Phenols by HPLC (S)	17-Dec-2020	20-Dec-2020	17-Dec-2020	20-Dec-2020	20-Dec-2020	17-Dec-2020	17-Dec-2020	17-Dec-2020
Sample description	15-Dec-2020	15-Dec-2020	15-Dec-2020	15-Dec-2020	15-Dec-2020	15-Dec-2020	15-Dec-2020	15-Dec-2020
Total Organic Carbon	22-Dec-2020	22-Dec-2020	22-Dec-2020	22-Dec-2020	22-Dec-2020	21-Dec-2020	22-Dec-2020	22-Dec-2020
TPH CWG GC (S)	18-Jan-2021	15-Jan-2021	19-Jan-2021	11-Jan-2021	15-Jan-2021	15-Jan-2021	19-Jan-2021	19-Jan-2021
VOC MS (S)	14-Jan-2021	14-Jan-2021	14-Jan-2021	11-Jan-2021	13-Jan-2021	13-Jan-2021	14-Jan-2021	15-Jan-2021

CERTIFICATE OF ANALYSIS

Work Order	: **PR20C5995**	Issue Date	: 04-Jan-2021
Customer	: **ALS Life Sciences Ltd**	Laboratory	: ALS Czech Republic, s.r.o.
Contact	: ALS Hawarden Reporting	Contact	: Client Service
Address	: Unit 7-8 Hawarden Business Park Manor Road, Hawarden CH5 3US Deeside United Kingdom	Address	: Na Harfe 336/9 Prague 9 - Vysocany 190 00 Czech Republic
E-mail	: euhdnsubconresults@ALSGlobal.com	E-mail	: customer.support@alsglobal.com
Telephone	: ----	Telephone	: +420 226 226 228
Project	: 201215-62	Page	: 1 of 3
Order number	: ----	Date Samples Received	: 17-Dec-2020
		Quote number	: PR2018ALSAL-GB0004 (CZ-256-18-0022)
Site	: ----	Date of test	: 18-Dec-2020 - 04-Jan-2021
Sampled by	: client	QC Level	: ALS CR Standard Quality Control Schedule

General Comments

This report shall not be reproduced except in full, without prior written approval from the laboratory.

The laboratory declares that the test results relate only to the listed samples. If the section "Sampled by" of the Certificate of analysis states: "Sampled by Customer" then the results relate to the sample as received.

Responsible for accuracy

Testing Laboratory No. 1163
Accredited by CAI according to
CSN EN ISO/IEC 17025:2018

Signatories		*Position*
Zdeněk Jirák		Environmental Business Unit Manager

The company is certified according to ČSN EN ISO 14001 (Environmental management systems) and ČSN ISO 45001 (Occupational health and safety management systems)

Analytical Results

Sub-Matrix: **SOIL**

				Client sample ID	23435281 2BSE-15		23436085 2BSE-16		23436180 2BSE-17	
				Laboratory sample ID	PR20C5995-001		PR20C5995-002		PR20C5995-003	
				Client sampling date / time	15-Dec-2020 13:13		15-Dec-2020 14:32		15-Dec-2020 14:38	
Parameter	*Method*	*LOR*	*Unit*		**Result**	**MU**	**Result**	**MU**	**Result**	**MU**
Physical Parameters										
Gross Calorific Value in Dry Matter Q(V/gr/d)	I-CV-CALS	0.50	MJ/kg DW		**3.37**	± 14.1%	**2.27**	± 17.8%	**3.19**	± 14.5%
Gross Calorific Value Original Q(V/gr/ar)	I-CV-CALS	0.50	MJ/kg		**2.93**	± 15.1%	**1.97**	± 19.6%	**2.65**	± 16.1%
Net Calorific Value in Dry Matter Q(V/net/d)	I-CV-CALS	0.50	MJ/kg DW		**3.15**	± 14.6%	**2.11**	± 18.7%	**3.07**	± 14.8%
Net Calorific Value Original Q(V/net/ar)	I-CV-CALS	0.50	MJ/kg		**2.44**	± 16.9%	**1.53**	± 24.0%	**2.16**	± 18.4%
Water Analytical M(ad)	I-WA-GR	0.50	%		**1.43**	± 30.7%	**0.89**	± 42.4%	**1.33**	± 32.0%
Water Gross M(ex)	I-WG-GR	0.50	%		**11.6**	± 20.2%	**12.5**	± 20.2%	**15.8**	± 20.1%
Water Total M(ar)	I-WT-CC	0.50	%		**12.9**	----	**13.2**	----	**16.9**	----
Dry matter @ 105°C	S-DRY-GRCI	0.10	%		**87.1**	± 6.0%	**86.8**	± 6.0%	**83.1**	± 6.0%

Sub-Matrix: **SOIL**

				Client sample ID	23435732 2BSE-18		23436788 2BSE-19		23436425 2BSE-20	
				Laboratory sample ID	PR20C5995-004		PR20C5995-005		PR20C5995-006	
				Client sampling date / time	15-Dec-2020 14:01		15-Dec-2020 15:27		15-Dec-2020 14:55	
Parameter	*Method*	*LOR*	*Unit*		**Result**	**MU**	**Result**	**MU**	**Result**	**MU**
Physical Parameters										
Gross Calorific Value in Dry Matter Q(V/gr/d)	I-CV-CALS	0.50	MJ/kg DW		**5.66**	± 11.6%	**1.07**	± 32.7%	**3.64**	± 13.6%
Gross Calorific Value Original Q(V/gr/ar)	I-CV-CALS	0.50	MJ/kg		**4.76**	± 12.2%	**0.93**	± 37.2%	**3.35**	± 14.1%
Net Calorific Value in Dry Matter Q(V/net/d)	I-CV-CALS	0.50	MJ/kg DW		**5.40**	± 11.8%	**0.94**	± 36.8%	**3.50**	± 13.8%
Net Calorific Value Original Q(V/net/ar)	I-CV-CALS	0.50	MJ/kg		**4.18**	± 12.8%	**0.52**	± 64.9%	**3.04**	± 14.8%
Water Analytical M(ad)	I-WA-GR	0.50	%		**1.36**	± 31.6%	**1.02**	± 38.2%	**0.59**	± 59.7%
Water Gross M(ex)	I-WG-GR	0.50	%		**14.7**	± 20.1%	**12.0**	± 20.2%	**7.35**	± 20.5%
Water Total M(ar)	I-WT-CC	0.50	%		**15.9**	----	**13.0**	----	**7.90**	----
Dry matter @ 105°C	S-DRY-GRCI	0.10	%		**84.1**	± 6.0%	**87.0**	± 6.0%	**92.1**	± 6.0%

Sub-Matrix: **SOIL**

				Client sample ID	23436315 2BSE-21		----		----	
				Laboratory sample ID	PR20C5995-007		----		----	
				Client sampling date / time	15-Dec-2020 14:45		----		----	
Parameter	*Method*	*LOR*	*Unit*		**Result**	**MU**	**Result**	**MU**	**Result**	**MU**
Physical Parameters										
Gross Calorific Value in Dry Matter Q(V/gr/d)	I-CV-CALS	0.50	MJ/kg DW		**3.18**	± 14.5%	**----**	----	**----**	----
Gross Calorific Value Original Q(V/gr/ar)	I-CV-CALS	0.50	MJ/kg		**2.82**	± 15.5%	**----**	----	**----**	----
Net Calorific Value in Dry Matter Q(V/net/d)	I-CV-CALS	0.50	MJ/kg DW		**3.00**	± 14.9%	**----**	----	**----**	----
Net Calorific Value Original Q(V/net/ar)	I-CV-CALS	0.50	MJ/kg		**2.40**	± 17.1%	**----**	----	**----**	----
Water Analytical M(ad)	I-WA-GR	0.50	%		**0.87**	± 43.2%	**----**	----	**----**	----
Water Gross M(ex)	I-WG-GR	0.50	%		**10.6**	± 20.2%	**----**	----	**----**	----
Water Total M(ar)	I-WT-CC	0.50	%		**11.4**	----	**----**	----	**----**	----
Dry matter @ 105°C	S-DRY-GRCI	0.10	%		**88.6**	± 6.0%	**----**	----	**----**	----

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes. Measurement uncertainty is expressed as expanded measurement

uncertainty with coverage factor k = 2, representing 95% confidence level.
Key: LOR = Limit of reporting; MU = Measurement Uncertainty. The MU does not include sampling uncertainty.

The end of result part of the certificate of analysis

Brief Method Summaries

Analytical Methods	*Method Descriptions*
Location of test performance: Bendlova 1687/7 Ceska Lipa Czech Republic 470 01	
I-CV-CALS	CZ_SOP_D06_07_124.A (CSN ISO 1928, CSN EN ISO 18125, CSN EN 15400, CSN EN 15170, CSN DIN 51900-1, CSN DIN 51900-2, CSN DIN 51900-3, CSN P CEN/TS 16023) Determination of gross calorific value by calorimetric method and calculation of net calorific value and emission factor by calculation from measured values.
I-WA-GR	CZ_SOP_D06_07_041 (CSN 44 1377, CSN EN ISO 18134-1, CSN EN ISO 18134-2, CSN EN ISO 18134-3, CSN P CEN/TS 15414-1, CSN P CEN/TS 15414-2, CSN EN 15414-3, CSN EN12880, CSN EN14346, CSN EN 15002) Determination of analytical water and gross water by gravimetry and determination of total water by calculation from measured values.
I-WG-GR	CZ_SOP_D06_07_041 (CSN 44 1377, CSN EN ISO 18134-1, CSN EN ISO 18134-2, CSN EN ISO 18134-3, CSN P CEN/TS 15414-1, CSN P CEN/TS 15414-2, CSN EN 15414-3, CSN EN12880, CSN EN14346, CSN EN 15002) Determination of analytical water and gross water by gravimetry and determination of total water by calculation from measured values.
I-WT-CC	CZ_SOP_D06_07_041 (CSN 44 1377, CSN EN ISO 18134-1, CSN EN ISO 18134-2, CSN EN ISO 18134-3, CSN P CEN/TS 15414-1, CSN P CEN/TS 15414-2, CSN EN 15414-3, CSN EN12880, CSN EN14346, CSN EN 15002) Determination of analytical water and gross water by gravimetry and determination of total water by calculation from measured values.
S-DRY-GRCI	CZ_SOP_D06_01_045 (CSN ISO 11465, CSN EN 12880, CSN EN 14346:2007), CZ_SOP_D06_07_046 (CSN ISO 11465, CSN EN 12880, CSN EN 14346, CSN 46 5735) Determination of dry matter by gravimetry and determination of moisture by calculation from measured values.

Preparation Methods	*Method Descriptions*
Location of test performance: Bendlova 1687/7 Ceska Lipa Czech Republic 470 01	
I-PPBURN	Sample combustion in a calorimetric bomb for fuel tests
* S-PPHOM.07	CZ_SOP_D06_07_P01 Preparation of solid samples for analysis (crushing, milling and pulverizing).
* S-PPHOM0.3	CZ_SOP_D06_07_P01 Preparation of solid samples for analysis (crushing, milling and pulverizing).

A `*` symbol preceding any method indicates laboratory or subcontractor non-accredited test. In the case when a procedure belonging to an accredited method was used for non-accredited matrix, would apply that the reported results are non-accredited. Please refer to General Comment section on front page for information. If the report contains subcontracted analysis, those are made in a subcontracted laboratory outside the laboratories ALS Czech Republic, s.r.o.
The calculation methods of summation parameters are available on request in the client service.

Appendix General

1. Results are expressed on a dry weight basis (dried at 35ºC) for all soil analyses except for the following: NRA and CEN Leach tests, flash point LOI, pH, ammonium as NH4 by the BRE method, VOC TICs and SVOC TICs.

2. If sufficient sample is received a sub sample will be retained free of charge for 30 days after analysis is completed (e-mailed) for all sample types unless the sample is destroyed on testing. The prepared soil sub sample that is analysed for asbestos will be retained for a period of 6 months after the analysis date. All bulk samples will be retained for a period of 6 months after the analysis date. All samples received and not scheduled will be disposed of one month after the date of receipt unless we are instructed to the contrary. Once the initial period has expired, a storage charge will be applied for each month or part thereof until the client cancels the request for sample storage. ALS reserve the right to charge for samples received and stored but not analysed.

3. With respect to turnaround, we will always endeavour to meet client requirements wherever possible, but turnaround times cannot be absolutely guaranteed due to so many variables beyond our control.

4. We take responsibility for any test performed by sub-contractors (marked with an asterisk). We endeavour to use UKAS/MCERTS Accredited Laboratories, who either complete a quality questionnaire or are audited by ourselves. For some determinands there are no UKAS/MCERTS Accredited Laboratories, in this instance a laboratory with a known track record will be utilised.

5. If no separate volatile sample is supplied by the client, or if a headspace or sediment is present in the volatile sample, the integrity of the data may be compromised. This will be flagged up as an invalid VOC on the test schedule and the result marked as deviating on the test certificate.

6. NDP - No determination possible due to insufficient/unsuitable sample.

7. Results relate only to the items tested.

8. LoDs (Limit of Detection) for wet tests reported on a dry weight basis are not corrected for moisture content.

9. **Surrogate recoveries** - Surrogates are added to your sample to monitor recovery of the test requested. A % recovery is reported, results are not corrected for the recovery measured. Typical recoveries for organics tests are 70-130%. Recoveries in soils are affected by organic rich or clay rich matrices. Waters can be affected by remediation fluids or high amounts of sediment. Test results are only ever reported if all of the associated quality checks pass; it is assumed that all recoveries outside of the values above are due to matrix affect.

10. Stones/debris are not routinely removed. We always endeavour to take a representative sub sample from the received sample.

11. In certain circumstances the method detection limit may be elevated due to the sample being outside the calibration range. Other factors that may contribute to this include possible interferences. In both cases the sample would be diluted which would cause the method detection limit to be raised.

12. Mercury results quoted on soils will not include volatile mercury as the analysis is performed on a dried and crushed sample.

13. For leachate preparations other than Zero Headspace Extraction (ZHE) volatile loss may occur.

14. For the BSEN 12457-3 two batch process to allow the cumulative release to be calculated, the volume of the leachate produced is measured and filtered for all tests. We therefore cannot carry out any unfiltered analysis. The tests affected include volatiles GCFID/GCMS and all subcontracted analysis.

15. Analysis and identification of specific compounds using GCFID is by retention time only, and we routinely calibrate and quantify for benzene, toluene, ethylbenzenes and xylenes (BTEX). For total volatiles in the C5-C12 range, the total area of the chromatogram is integrated and expressed as ug/kg or ug/l. Although this analysis is commonly used for the quantification of gasoline range organics (GRO), the system will also detect other compounds such as chlorinated solvents, and this may lead to a falsely high result with respect to hydrocarbons only. It is not possible to specifically identify these non-hydrocarbons, as standards are not routinely run for any other compounds, and for more definitive identification, volatiles by GCMS should be utilised.

16. We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample. Other coarse granular material such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

17. **Tentatively Identified Compounds (TICs)** are non-target peaks in VOC and SVOC analysis. All non-target peaks detected with a concentration above the LoD are subjected to a mass spectral library search. Non-target peaks with a library search confidence of >75% are reported based on the best mass spectral library match. When a non-target peak with a library search confidence of <75% is detected it is reported as "mixed hydrocarbons". Non-target compounds identified from the scan data are semi-quantified relative to one of the deuterated internal standards, under the same chromatographic conditions as the target compounds. This result is reported as a semi-quantitative value and reported as Tentatively Identified Compounds (TICs). TICs are outside the scope of UKAS accreditation and are not moisture corrected.

18. **Sample Deviations**

If a sample is classed as deviated then the associated results may be compromised.

1	**Container with Headspace provided for volatiles analysis**
2	**Incorrect container received**
3	**Deviation from method**
4	**Matrix interference**
♦	**Sample holding time exceeded in laboratory**
@	**Sample holding time exceeded due to late arrival of instructions or samples**
§	**Sampled on date not provided**

19. **Asbestos**

When requested, the individual sub sample scheduled will be analysed in house for the presence of asbestos fibres and asbestos containing material by our documented in house method TM048 based on HSG 248 (2005), which is accredited to ISO17025. If a specific asbestos fibre type is not found this will be reported as "Not detected". If no asbestos fibre types are found all will be reported as "Not detected" and the sub sample analysed deemed to be clear of asbestos. If an asbestos fibre type is found it will be reported as detected (for each fibre type found). Testing can be carried out on asbestos positive samples, but, due to Health and Safety considerations, may be replaced by alternative tests or reported as No Determination Possible (NDP). The quantity of asbestos present is not determined unless specifically requested.

Identification of Asbestos in Bulk Materials & Soils

The results for identification of asbestos in bulk materials are obtained from supplied bulk materials which have been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

The results for identification of asbestos in soils are obtained from a homogenised sub sample which has been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

Asbestos Type	Common Name
Chrysotile	White Asbestos
Amosite	Brown Asbestos
Crocidolite	Blue Asbestos
Fibrous Actinolite	-
Fibrous Anthophyllite	-
Fibrous Tremolite	-

Visual Estimation Of Fibre Content

Estimation of fibre content is not permitted as part of our UKAS accredited test other than: - Trace - Where only one or two asbestos fibres were identified.

Respirable Fibres

Respirable fibres are defined as fibres of <3 µm diameter, longer than 5 µm and with aspect ratios of at least 3:1 that can be inhaled into the lower regions of the lung and are generally acknowledged to be most important predictor of hazard and risk for cancers of the lung.
Standing Committee of Analysts, *The Quantification of Asbestos in Soil (2017).*

Further guidance on typical asbestos fibre content of manufactured products can be found in HSG 264.

The identification of asbestos containing materials and soils falls within our schedule of tests for which we hold UKAS accreditation, however opinions, interpretations and all other information contained in the report are outside the scope of UKAS accreditation.

Unit 7-8 Hawarden Business Park
Manor Road (off Manor Lane)
Hawarden
Deeside
CH5 3US
Tel: (01244) 528700
Fax: (01244) 528701
email: hawardencustomerservices@alsglobal.com
Website: www.alsenvironmental.co.uk

Rodgers Leask
Office 225
2430/2440
Aztec West
Almondsbury
Bristol
BS32 4QA

Attention: Elliot Thomas

CERTIFICATE OF ANALYSIS

Date of report Generation:	19 January 2021
Customer:	Rodgers Leask
Sample Delivery Group (SDG):	201215-62
Your Reference:	P18-669
Location:	Llanwern
Report No:	583598

This report has been revised and directly supersedes 583597 in its entirety.

We received 48 samples on Tuesday December 15, 2020 and 48 of these samples were scheduled for analysis which was completed on Tuesday January 19, 2021. Accredited laboratory tests are defined within the report, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation.

Should this report require incorporation into client reports, it must be used in its entirety and not simply with the data sections alone.

Chemical testing (unless subcontracted) performed at ALS Life Sciences Ltd Hawarden (Method codes TM) or ALS Life Sciences Ltd Aberdeen (Method codes S).

All sample data is provided by the customer. The reported results relate to the sample supplied, and on the basis that this data is correct.
Incorrect sampling dates and/or sample information will affect the validity of results.
The customer is not permitted to reproduce this report except in full without the approval of the laboratory.

Approved By:

Sonia McWhan

Operations Manager

CERTIFICATE OF ANALYSIS

SDG:	201215-62	**Client Reference:**	P18-669	**Report Number:**	583598
Location:	Llanwern	**Order Number:**		**Superseded Report:**	583597

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
23432757	2BN-1		0.00 - 0.00	14/12/2020
23432763	2BN-2		0.00 - 0.00	14/12/2020
23432768	2BN-3		0.00 - 0.00	14/12/2020
23432776	2BN-4		0.00 - 0.00	14/12/2020
23432780	2BN-5		0.00 - 0.00	14/12/2020
23432790	2BN-6		0.00 - 0.00	14/12/2020
23432795	2BN-7		0.00 - 0.00	14/12/2020
23432801	2BN-8		0.00 - 0.00	14/12/2020
23432805	2BN-9		0.00 - 0.00	14/12/2020
23432810	2BN-10		0.00 - 0.00	14/12/2020
23432817	2BN2-1		0.00 - 0.00	14/12/2020
23432823	2BN2-2		0.00 - 0.00	14/12/2020
23432829	2BN2-3		0.00 - 0.00	14/12/2020
23432837	2BN2-4		0.00 - 0.00	14/12/2020
23432845	2BN2-5		0.00 - 0.00	14/12/2020
23432860	2BN2-6		0.00 - 0.00	14/12/2020
23432866	2BN2-7		0.00 - 0.00	14/12/2020
23432871	2BN2-12		0.00 - 0.00	14/12/2020
23432875	2BN2-13		0.00 - 0.00	14/12/2020
23432880	2BN2-14		0.00 - 0.00	14/12/2020
23432885	2BN2-15		0.00 - 0.00	14/12/2020
23432889	2BN2-16		0.00 - 0.00	14/12/2020
23432897	2BN2-17		0.00 - 0.00	14/12/2020
23432910	2BN2-18		0.00 - 0.00	14/12/2020
23432918	2BN2-19		0.00 - 0.00	14/12/2020
23432941	2BN2-20		0.00 - 0.00	14/12/2020
23432949	2BN2-21		0.00 - 0.00	14/12/2020
23432955	2BN2-22		0.00 - 0.00	14/12/2020
23432959	2BN2-23		0.00 - 0.00	14/12/2020
23432963	2BN2-24		0.00 - 0.00	14/12/2020
23432967	2BN2-25		0.00 - 0.00	14/12/2020
23432973	2BN2-26		0.00 - 0.00	14/12/2020
23432977	2BN2-27		0.00 - 0.00	14/12/2020
23432981	2BN2-28		0.00 - 0.00	14/12/2020
23432722	2BSE-15		0.00 - 0.00	11/12/2020
23432786	2BSE-16		0.00 - 0.00	11/12/2020
23432853	2BSE-17		0.00 - 0.00	11/12/2020
23432930	2BSE-18		0.00 - 0.00	11/12/2020
23432986	2BSE-19		0.00 - 0.00	11/12/2020
23432990	2BSE-20		0.00 - 0.00	11/12/2020
23432994	2BSE-21		0.00 - 0.00	11/12/2020
23433001	2BSE-36		0.00 - 0.00	11/12/2020
23433006	2BSE-37		0.00 - 0.00	11/12/2020
23432728	2BSE-38		0.00 - 0.00	11/12/2020
23432735	2BSE-39		0.00 - 0.00	11/12/2020
23432740	2BSE-40		0.00 - 0.00	11/12/2020
23432745	2BSE-41		0.00 - 0.00	11/12/2020
23432753	2BSE-42		0.00 - 0.00	11/12/2020

Only received samples which have had analysis scheduled will be shown on the following pages.

CERTIFICATE OF ANALYSIS

SDG:	201215-62	**Client Reference:**	P18-669	**Report Number:**	583598
Location:	Llanwern	**Order Number:**		**Superseded Report:**	583597

Results Legend

X Test

N No Determination Possible

Sample Types -

S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

Lab Sample No(s)			23432757		23432763		23432768		23432776		23432780		23432790		23432795		23432801				
Customer Sample Reference			2BN-1		2BN-2		2BN-3		2BN-4		2BN-5		2BN-6		2BN-7		2BN-8				
AGS Reference																					
Depth (m)			0.00 - 0.00		0.00 - 0.00		0.00 - 0.00		0.00 - 0.00		0.00 - 0.00		0.00 - 0.00		0.00 - 0.00		0.00 - 0.00				
Container			1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)
Sample Type			S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
Ammonium Soil by Titration	All	NDPs: 0 Tests: 48		X		X			X		X			X		X			X		X
Asbestos ID in Solid Samples	All	NDPs: 0 Tests: 24	X					X					X					X			
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 48		X		X			X		X			X		X			X		X
EPH CWG GC (S)	All	NDPs: 0 Tests: 48		X		X			X		X			X		X			X		X
GRO by GC-FID (S)	All	NDPs: 0 Tests: 48			X		X			X		X			X		X			X	
Metals in solid samples by OES	All	NDPs: 0 Tests: 48		X		X			X		X			X		X			X		X
PAH by GCMS	All	NDPs: 0 Tests: 48		X		X			X		X			X		X			X		X
pH	All	NDPs: 0 Tests: 48		X		X			X		X			X		X			X		X
Phenols by HPLC (S)	All	NDPs: 0 Tests: 48		X		X			X		X			X		X			X		X
Sample description	All	NDPs: 0 Tests: 48		X		X			X		X			X		X			X		X
Total Organic Carbon	All	NDPs: 0 Tests: 48		X		X			X		X			X		X			X		X
TPH CWG GC (S)	All	NDPs: 0 Tests: 48		X		X			X		X			X		X			X		X
VOC MS (S)	All	NDPs: 0 Tests: 51		X	X		X			X		X	X	X	X				X		

23432860	2BN2-6		0.00 - 0.00	60g VOC (ALE215)	S					X								X
				250g Amber Jar (ALE210)	S	X		X	X		X	X	X	X	X	X	X	
23432845	2BN2-5		0.00 - 0.00	60g VOC (ALE215)	S					X								X
				250g Amber Jar (ALE210)	S	X		X	X		X	X	X	X	X	X	X	
				1kg TUB with Handle (ALE260)	S		X											
23432837	2BN2-4		0.00 - 0.00	60g VOC (ALE215)	S					X								X
				250g Amber Jar (ALE210)	S	X		X	X		X	X	X	X	X	X	X	
23432829	2BN2-3		0.00 - 0.00	60g VOC (ALE215)	S					X								X
				250g Amber Jar (ALE210)	S	X		X	X		X	X	X	X	X	X	X	
				1kg TUB with Handle (ALE260)	S		X											
23432823	2BN2-2		0.00 - 0.00	60g VOC (ALE215)	S					X								X
				250g Amber Jar (ALE210)	S	X		X	X		X	X	X	X	X	X	X	
23432817	2BN2-1		0.00 - 0.00	60g VOC (ALE215)	S					X								X
				250g Amber Jar (ALE210)	S	X		X	X		X	X	X	X	X	X	X	
				1kg TUB with Handle (ALE260)	S		X											
23432810	2BN-10		0.00 - 0.00	60g VOC (ALE215)	S					X								X
				250g Amber Jar (ALE210)	S	X		X	X		X	X	X	X	X	X	X	
23432805	2BN-9		0.00 - 0.00	60g VOC (ALE215)	S					X								X
				250g Amber Jar (ALE210)	S	X		X	X		X	X	X	X	X	X	X	
				1kg TUB with Handle (ALE260)	S		X											
23432801	2BN-8		0.00 - 0.00	60g VOC (ALE215)	S					X								X

Validated

CERTIFICATE OF ANALYSIS

SDG:	201215-62	**Client Reference:**	P18-669	**Report Number:**	583598
Location:	Llanwern	**Order Number:**		**Superseded Report:**	583597

Results Legend

X Test

N No Determination Possible

Sample Types -

S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

Lab Sample No(s)			23432866	23432871	23432875	23432880	23432885	23432889	23432897	23432910											
Customer Sample Reference			2BN2-7	2BN2-12	2BN2-13	2BN2-14	2BN2-15	2BN2-16	2BN2-17	2BN2-18											
AGS Reference																					
Depth (m)			0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00											
Container			1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)
Sample Type			S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
Ammonium Soil by Titration	All	NDPs: 0 Tests: 48		X		X			X		X			X		X			X		X
Asbestos ID in Solid Samples	All	NDPs: 0 Tests: 24	X					X					X					X			
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 48		X		X			X		X			X		X			X		X
EPH CWG GC (S)	All	NDPs: 0 Tests: 48		X		X			X		X			X		X			X		X
GRO by GC-FID (S)	All	NDPs: 0 Tests: 48			X		X			X		X			X		X			X	
Metals in solid samples by OES	All	NDPs: 0 Tests: 48		X		X			X		X			X		X			X		X
PAH by GCMS	All	NDPs: 0 Tests: 48		X		X			X		X			X		X			X		X
pH	All	NDPs: 0 Tests: 48		X		X			X		X			X		X			X		X
Phenols by HPLC (S)	All	NDPs: 0 Tests: 48		X		X			X		X			X		X			X		X
Sample description	All	NDPs: 0 Tests: 48		X		X			X		X			X		X			X		X
Total Organic Carbon	All	NDPs: 0 Tests: 48		X		X			X		X			X		X			X		X
TPH CWG GC (S)	All	NDPs: 0 Tests: 48		X		X			X		X			X		X			X		X
VOC MS (S)	All	NDPs: 0 Tests: 51			X		X			X		X			X		X			X	

23432973	2BN2-26		0.00 - 0.00	60g VOC (ALE215)	S
				250g Amber Jar (ALE210)	S
23432967	2BN2-25		0.00 - 0.00	60g VOC (ALE215)	S
				250g Amber Jar (ALE210)	S
				1kg TUB with Handle (ALE260)	S
23432963	2BN2-24		0.00 - 0.00	60g VOC (ALE215)	S
				250g Amber Jar (ALE210)	S
23432959	2BN2-23		0.00 - 0.00	60g VOC (ALE215)	S
				250g Amber Jar (ALE210)	S
				1kg TUB with Handle (ALE260)	S
23432955	2BN2-22		0.00 - 0.00	60g VOC (ALE215)	S
				250g Amber Jar (ALE210)	S
23432949	2BN2-21		0.00 - 0.00	60g VOC (ALE215)	S
				250g Amber Jar (ALE210)	S
				1kg TUB with Handle (ALE260)	S
23432941	2BN2-20		0.00 - 0.00	60g VOC (ALE215)	S
				250g Amber Jar (ALE210)	S
23432918	2BN2-19		0.00 - 0.00	60g VOC (ALE215)	S
				250g Amber Jar (ALE210)	S
				1kg TUB with Handle (ALE260)	S
23432910	2BN2-18		0.00 - 0.00	60g VOC (ALE215)	S

Validated

CERTIFICATE OF ANALYSIS

SDG:	201215-62	**Client Reference:**	P18-669	**Report Number:**	583598
Location:	Llanwern	**Order Number:**		**Superseded Report:**	583597

Results Legend

X Test

N No Determination Possible

Sample Types -

S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

Lab Sample No(s)			23432977	23432981		23432722			23432786		23432853			23432930			23432986			
Customer Sample Reference			2BN2-27	2BN2-28		2BSE-15			2BSE-16		2BSE-17			2BSE-18			2BSE-19			
AGS Reference																				
Depth (m)			0.00 - 0.00	0.00 - 0.00		0.00 - 0.00			0.00 - 0.00		0.00 - 0.00			0.00 - 0.00			0.00 - 0.00			
Container			1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)	60g VOC (ALE215)
Sample Type			S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
Ammonium Soil by Titration	All	NDPs: 0 Tests: 48		X		X			X		X			X			X			X	
Asbestos ID in Solid Samples	All	NDPs: 0 Tests: 24	X					X					X						X		
Calorific Value (S)*	All	NDPs: 0 Tests: 7							X		X			X			X			X	
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 48		X		X			X		X			X			X			X	
EPH CWG GC (S)	All	NDPs: 0 Tests: 48		X		X		X			X		X			X				X	
GRO by GC-FID (S)	All	NDPs: 0 Tests: 48			X		X			X		X			X			X			X
Metals in solid samples by OES	All	NDPs: 0 Tests: 48		X		X			X		X			X			X			X	
PAH by GCMS	All	NDPs: 0 Tests: 48		X		X			X		X			X			X			X	
pH	All	NDPs: 0 Tests: 48		X		X			X		X			X			X			X	
Phenols by HPLC (S)	All	NDPs: 0 Tests: 48		X		X			X		X			X			X			X	
Sample description	All	NDPs: 0 Tests: 48		X		X			X		X			X			X			X	
Total Organic Carbon	All	NDPs: 0 Tests: 48		X		X			X		X			X			X			X	
TPH CWG GC (S)	All	NDPs: 0 Tests: 48		X		X		X			X		X			X				X	
VOC MS (S)	All	NDPs: 0 Tests: 51			X		X			X		X			X			X			X

23432753	2BSE-42		0.00 - 0.00	250g Amber Jar (ALE210)	S	X			X	X		X	X	X	X	X	X	X	
23432745	2BSE-41		0.00 - 0.00	60g VOC (ALE215)	S						X								X
				250g Amber Jar (ALE210)	S	X			X	X		X	X	X	X	X	X	X	
				1kg TUB with Handle (ALE260)	S		X												
23432740	2BSE-40		0.00 - 0.00	60g VOC (ALE215)	S						X								X
				250g Amber Jar (ALE210)	S	X			X	X		X	X	X	X	X	X	X	
23432735	2BSE-39		0.00 - 0.00	60g VOC (ALE215)	S						X								X
				250g Amber Jar (ALE210)	S	X			X	X		X	X	X	X	X	X	X	
				1kg TUB with Handle (ALE260)	S		X												
23432728	2BSE-38		0.00 - 0.00	60g VOC (ALE215)	S						X								X
				250g Amber Jar (ALE210)	S	X			X	X		X	X	X	X	X	X	X	
23433006	2BSE-37		0.00 - 0.00	60g VOC (ALE215)	S						X								X
				250g Amber Jar (ALE210)	S	X			X	X		X	X	X	X	X	X	X	
				1kg TUB with Handle (ALE260)	S		X												
23433001	2BSE-36		0.00 - 0.00	60g VOC (ALE215)	S						X								X
				250g Amber Jar (ALE210)	S	X			X	X		X	X	X	X	X	X	X	
23432994	2BSE-21		0.00 - 0.00	60g VOC (ALE215)	S						X								X
				250g Amber Jar (ALE210)	S	X		X	X	X		X	X	X	X	X	X	X	
				1kg TUB with Handle (ALE260)	S		X												
23432990	2BSE-20		0.00 - 0.00	60g VOC (ALE215)	S						X								X
				250g Amber Jar (ALE210)	S	X		X	X	X		X	X	X	X	X	X	X	

CERTIFICATE OF ANALYSIS

SDG:	201215-62	**Client Reference:**	P18-669	**Report Number:**	583598
Location:	Llanwern	**Order Number:**		**Superseded Report:**	583597

Results Legend

X **Test**

N **No Determination Possible**

Sample Types -

S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

			Lab Sample No(s)	Customer Sample Reference	AGS Reference	Depth (m)	Container	Sample Type
			23432753	2BSE-42		0.00 - 0.00	60g VOC (ALE215)	S
GRO by GC-FID (S)	All	NDPs: 0 Tests: 48					X	
VOC MS (S)	All	NDPs: 0 Tests: 51					X	

CERTIFICATE OF ANALYSIS

SDG:	201215-62	**Client Reference:**	P18-669	**Report Number:**	583598
Location:	Llanwern	**Order Number:**		**Superseded Report:**	583597

Sample Descriptions

Grain Sizes

very fine	<0.063mm	fine	0.063mm - 0.1mm	medium	0.1mm - 2mm	coarse	2mm - 10mm	very coarse	>10mm

Lab Sample No(s)	Customer Sample Ref.	Depth (m)	Colour	Description	Inclusions	Inclusions 2
23432757	2BN-1	0.00 - 0.00	Dark Brown	Sandy Clay Loam	Stones	Vegetation
23432763	2BN-2	0.00 - 0.00	Dark Brown	Sandy Loam	Stones	N/A
23432768	2BN-3	0.00 - 0.00	Dark Brown	Loamy Sand	None	Stones
23432776	2BN-4	0.00 - 0.00	Dark Brown	Sandy Loam	Stones	N/A
23432780	2BN-5	0.00 - 0.00	Dark Brown	Sandy Clay Loam	Stones	Vegetation
23432790	2BN-6	0.00 - 0.00	Dark Brown	Sandy Clay Loam	Stones	Vegetation
23432795	2BN-7	0.00 - 0.00	Dark Brown	Loamy Sand	None	Stones
23432801	2BN-8	0.00 - 0.00	Dark Brown	Loamy Sand	Vegetation	Stones
23432805	2BN-9	0.00 - 0.00	Dark Brown	Sandy Clay Loam	Stones	Vegetation
23432810	2BN-10	0.00 - 0.00	Dark Brown	Loamy Sand	None	Stones
23432817	2BN2-1	0.00 - 0.00	Dark Brown	Sandy Clay Loam	Stones	None
23432823	2BN2-2	0.00 - 0.00	Dark Brown	Sandy Loam	Stones	None
23432829	2BN2-3	0.00 - 0.00	Dark Brown	Sandy Clay Loam	Stones	None
23432837	2BN2-4	0.00 - 0.00	Dark Brown	Sandy Clay Loam	Stones	Vegetation
23432845	2BN2-5	0.00 - 0.00	Dark Brown	Sandy Clay Loam	Stones	Vegetation
23432860	2BN2-6	0.00 - 0.00	Dark Brown	Sandy Clay Loam	Stones	Vegetation
23432866	2BN2-7	0.00 - 0.00	Dark Brown	Sandy Clay Loam	Stones	Vegetation
23432871	2BN2-12	0.00 - 0.00	Dark Brown	Sandy Clay Loam	Stones	Vegetation
23432875	2BN2-13	0.00 - 0.00	Black	Sandy Loam	Stones	None
23432880	2BN2-14	0.00 - 0.00	Dark Brown	Sandy Clay Loam	Stones	None
23432885	2BN2-15	0.00 - 0.00	Dark Brown	Sandy Loam	Stones	None
23432889	2BN2-16	0.00 - 0.00	Dark Brown	Sandy Clay Loam	Stones	None
23432897	2BN2-17	0.00 - 0.00	Dark Brown	Sandy Clay Loam	Stones	Vegetation
23432910	2BN2-18	0.00 - 0.00	Dark Brown	Sandy Clay Loam	Stones	Vegetation
23432918	2BN2-19	0.00 - 0.00	Dark Brown	Sandy Clay Loam	Stones	Vegetation
23432941	2BN2-20	0.00 - 0.00	Dark Brown	Sandy Clay Loam	Stones	Vegetation
23432949	2BN2-21	0.00 - 0.00	Dark Brown	Sandy Clay Loam	Stones	Vegetation
23432955	2BN2-22	0.00 - 0.00	Dark Brown	Sandy Clay Loam	Stones	Vegetation
23432959	2BN2-23	0.00 - 0.00	Dark Brown	Sandy Clay Loam	Stones	Vegetation
23432963	2BN2-24	0.00 - 0.00	Dark Brown	Sandy Clay Loam	Stones	Vegetation
23432967	2BN2-25	0.00 - 0.00	Dark Brown	Sandy Clay Loam	Stones	Vegetation
23432973	2BN2-26	0.00 - 0.00	Dark Brown	Sandy Clay Loam	Stones	None
23432977	2BN2-27	0.00 - 0.00	Dark Brown	Sandy Loam	Stones	None
23432981	2BN2-28	0.00 - 0.00	Dark Brown	Sandy Loam	Stones	None
23432722	2BSE-15	0.00 - 0.00	Dark Brown	Sandy Loam	Stones	None
23432786	2BSE-16	0.00 - 0.00	Dark Brown	Sandy Clay Loam	Stones	None
23432853	2BSE-17	0.00 - 0.00	Dark Brown	Sandy Clay Loam	Stones	None
23432930	2BSE-18	0.00 - 0.00	Dark Brown	Sandy Loam	Stones	None
23432986	2BSE-19	0.00 - 0.00	Dark Brown	Sandy Clay Loam	Stones	None

CERTIFICATE OF ANALYSIS

SDG:	201215-62	**Client Reference:**	P18-669	**Report Number:**	583598
Location:	Llanwern	**Order Number:**		**Superseded Report:**	583597

			Colour	Description	Inclusions	Inclusions 2
23432990	2BSE-20	0.00 - 0.00	Dark Brown	Sandy Clay Loam	Stones	None
23432994	2BSE-21	0.00 - 0.00	Dark Brown	Sandy Loam	Stones	None
23433001	2BSE-36	0.00 - 0.00	Dark Brown	Sandy Loam	Stones	None
23433006	2BSE-37	0.00 - 0.00	Dark Brown	Sandy Loam	Stones	Vegetation
23432728	2BSE-38	0.00 - 0.00	Dark Brown	Sandy Loam	Stones	Vegetation
23432735	2BSE-39	0.00 - 0.00	Dark Brown	Sandy Loam	Stones	None
23432740	2BSE-40	0.00 - 0.00	Dark Brown	Sandy Clay Loam	Stones	Vegetation
23432745	2BSE-41	0.00 - 0.00	Dark Brown	Sandy Clay Loam	Stones	Vegetation
23432753	2BSE-42	0.00 - 0.00	Dark Brown	Sand	Stones	Vegetation

These descriptions are only intended to act as a cross check if sample identities are questioned, and to provide a log of sample matrices with respect to MCERTS validation. They are not intended as full geological descriptions.

We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally ocurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample.

Other coarse granular materials such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

Validated

CERTIFICATE OF ANALYSIS

SDG:	201215-62	**Client Reference:**	P18-669	**Report Number:**	583598
Location:	Llanwern	**Order Number:**		**Superseded Report:**	583597

Results Legend	
#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	2BN-1	2BN-2	2BN-3	2BN-4	2BN-5	2BN-6
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	14/12/2020	14/12/2020	14/12/2020	14/12/2020	14/12/2020	14/12/2020
			Sample Time	.	.	.	.	.	.
			Date Received	15/12/2020	15/12/2020	15/12/2020	15/12/2020	15/12/2020	15/12/2020
			SDG Ref	201215-62	201215-62	201215-62	201215-62	201215-62	201215-62
			Lab Sample No.(s)	23432757	23432763	23432768	23432776	23432780	23432790
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		9.6	13	13	15	6	8.5
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	<12 M	<12 M	<12 M	<12 M	<12 M
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	0.0115 M	0.0117 M	<0.01 M	<0.01 M
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M	<0.015 M	0.105 M	<0.015 M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 M	<0.035 M	0.117 M	<0.035 M	<0.035 M
Soil Organic Matter (SOM)	<0.35 %	TM132		30.5 #	29.8 #	21.4 #	48.6 #	22.6 #	25.3 #
pH	1 pH Units	TM133		8.77 M	10.3 M	11.3 M	10.9 M	9.99 M	9.51 M
Cyanide, Total	<1 mg/kg	TM153		<1 M	<1 M	1.09 M	1.26 M	<1 M	1.02 M
Arsenic	<0.6 mg/kg	TM181		17.8 M	10.5 M	7.02 M	9.62 M	9.86 M	7.62 M
Cadmium	<0.02 mg/kg	TM181		1.79 M	1.48 M	0.726 M	1.68 M	0.621 M	1.14 M
Chromium	<0.9 mg/kg	TM181		117 M	97.7 M	300 M	191 M	45.9 M	84.7 M
Copper	<1.4 mg/kg	TM181		26.6 M	24.9 M	20.5 M	26.1 M	22.3 M	19.1 M
Iron	<1000 mg/kg	TM181		71900 #	77800 #	105000 #	81400 #	57500 #	76600 #
Lead	<0.7 mg/kg	TM181		196 M	172 M	201 M	197 M	141 M	126 M
Manganese	<0.13 mg/kg	TM181		17600 M	7790 M	13000 M	13100 M	398 M	5980 M
Mercury	<0.14 mg/kg	TM181		<0.14 M	<0.14 M	0.17 M	<0.14 M	0.167 M	<0.14 M
Nickel	<0.2 mg/kg	TM181		18.8 M	21.7 M	16.9 M	18.5 M	22.1 M	22.4 M
Selenium	<1 mg/kg	TM181		5.76 #	<1 #	4.53 #	3.46 #	<1 #	<1 #
Vanadium	<0.2 mg/kg	TM181		214 #		457 #	253 #	84.1 #	153 #
Zinc	<1.9 mg/kg	TM181		730 M	614 M	880 M	730 M	493 M	505 M

Validated

CERTIFICATE OF ANALYSIS

SDG:	201215-62	**Client Reference:**	P18-669	**Report Number:**	583598
Location:	Llanwern	**Order Number:**		**Superseded Report:**	583597

Results Legend	
#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	2BN-7	2BN-8	2BN-9	2BN-10	2BN2-1	2BN2-2
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	14/12/2020	14/12/2020	14/12/2020	14/12/2020	14/12/2020	14/12/2020
			Sample Time	.	.	.	.	.	.
			Date Received	15/12/2020	15/12/2020	15/12/2020	15/12/2020	15/12/2020	15/12/2020
			SDG Ref	201215-62	201215-62	201215-62	201215-62	201215-62	201215-62
			Lab Sample No.(s)	23432795	23432801	23432805	23432810	23432817	23432823
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		13	17	3.9	16	9.2	12
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	<12 M	<12 M	<12 M	<12 M	<12 M
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 M	0.0121 M	<0.01 M	<0.01 M	0.011 M	<0.01 M
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M	0.011 M	<0.01 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M
Soil Organic Matter (SOM)	<0.35 %	TM132		55.2 #	31.7 #	51.4 #	14.9 #	33.4 #	27.4 #
pH	1 pH Units	TM133		10.1 M	11.2 M	10.9 M	10.2 M	10.4 M	11.5 M
Cyanide, Total	<1 mg/kg	TM153		<1 M	<1 M	<1 M	<1 M	<1 M	<1 M
Arsenic	<0.6 mg/kg	TM181		8.69 M	10.3 M	12.8 M	12.6 M	8.61 M	7.33 M
Cadmium	<0.02 mg/kg	TM181		1.72 M	1.89 M	1.67 M	1.11 M	1.44 M	0.873 M
Chromium	<0.9 mg/kg	TM181		122 M	141 M	149 M	144 M	176 M	191 M
Copper	<1.4 mg/kg	TM181		22.1 M	22.3 M	26.9 M	44.6 M	21.5 M	18.4 M
Iron	<1000 mg/kg	TM181		65200 #	93400 #	76700 #	116000 #	98600 #	81400 #
Lead	<0.7 mg/kg	TM181		214 M	311 M	257 M	120 M	185 M	86.3 M
Manganese	<0.13 mg/kg	TM181		7630 M	14400 M	10500 M	11200 M	12200 M	12700 M
Mercury	<0.14 mg/kg	TM181		<0.14 M	0.195 M	<0.14 M	<0.14 M	<0.14 M	<0.14 M
Nickel	<0.2 mg/kg	TM181		18.1 M	18.7 M	19.8 M	29.1 M	15.3 M	12.1 M
Selenium	<1 mg/kg	TM181		1.74 #	5.25 #	2.66 #	<1 #	3.56 #	4.53 #
Vanadium	<0.2 mg/kg	TM181		206 #	425 #	211 #	218 #	323 #	246 #
Zinc	<1.9 mg/kg	TM181		760 M	1430 M	688 M	458 M	802 M	360 M

Validated

CERTIFICATE OF ANALYSIS

SDG:	201215-62	**Client Reference:**	P18-669	**Report Number:**	583598
Location:	Llanwern	**Order Number:**		**Superseded Report:**	583597

Results Legend	
#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	2BN2-3	2BN2-4	2BN2-5	2BN2-6	2BN2-7	2BN2-12
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	14/12/2020	14/12/2020	14/12/2020	14/12/2020	14/12/2020	14/12/2020
			Sample Time	.	.	.	.	.	.
			Date Received	15/12/2020	15/12/2020	15/12/2020	15/12/2020	15/12/2020	15/12/2020
			SDG Ref	201215-62	201215-62	201215-62	201215-62	201215-62	201215-62
			Lab Sample No.(s)	23432829	23432837	23432845	23432860	23432866	23432871
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		8.8	8.4	7.7	9.5	9	9.7
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	<12 M	<12 M	<12 M	<12 M	<12 M
Phenol	<0.01 mg/kg	TM062 (S)		0.011 M	<0.01 M	0.0108 M	0.0222 M	0.011 M	<0.01 M
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	0.0108 M	0.0222 M	<0.01 M	<0.01 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M	<0.015 M	0.0777 M	<0.015 M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 M	<0.035 M	0.122 M	<0.035 M	<0.035 M
Soil Organic Matter (SOM)	<0.35 %	TM132		31 #	22.1 #	36.4 #	28.1 #	43.8 #	24.1 #
pH	1 pH Units	TM133		10.6 M	10.9 M	10.7 M	11.4 M	10.8 M	10.5 M
Cyanide, Total	<1 mg/kg	TM153		<1 M	1.44 M	1.56 M	2.05 M	<1 M	1.54 M
Arsenic	<0.6 mg/kg	TM181		10.7 M	6.21 M	10.3 M	8.06 M	14.6 M	8.2 M
Cadmium	<0.02 mg/kg	TM181		0.323 M	0.741 M	1.21 M	1.03 M	3.98 M	1.28 M
Chromium	<0.9 mg/kg	TM181		119 M	191 M	222 M	187 M	193 M	174 M
Copper	<1.4 mg/kg	TM181		21.4 M	18.3 M	35.4 M	20.1 M	30.4 M	19.8 M
Iron	<1000 mg/kg	TM181		132000 #	80100 #	125000 #	113000 #	161000 #	112000 #
Lead	<0.7 mg/kg	TM181		163 M	78.9 M	183 M	178 M	492 M	187 M
Manganese	<0.13 mg/kg	TM181		11800 M	12700 M	17200 M	15100 M	12100 M	12500 M
Mercury	<0.14 mg/kg	TM181		0.3 M	<0.14 M	<0.14 M	<0.14 M	<1.4 M	<0.14 M
Nickel	<0.2 mg/kg	TM181		11.9 M	11 M	24 M	13.1 M	31 M	15 M
Selenium	<1 mg/kg	TM181		<1 #	3.55 #	3.91 #	1.6 #	<10 #	1.13 #
Vanadium	<0.2 mg/kg	TM181		319 #	231 #	300 #	200 #	313 #	174 #
Zinc	<1.9 mg/kg	TM181		764 M	337 M	800 M	858 M	1870 M	934 M

Validated

CERTIFICATE OF ANALYSIS

SDG:	201215-62	**Client Reference:**	P18-669	**Report Number:**	583598
Location:	Llanwern	**Order Number:**		**Superseded Report:**	583597

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	2BN2-13	2BN2-14	2BN2-15	2BN2-16	2BN2-17	2BN2-18
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	14/12/2020	14/12/2020	14/12/2020	14/12/2020	14/12/2020	14/12/2020
			Sample Time	.	.	.	.	.	.
			Date Received	15/12/2020	15/12/2020	15/12/2020	15/12/2020	15/12/2020	15/12/2020
			SDG Ref	201215-62	201215-62	201215-62	201215-62	201215-62	201215-62
			Lab Sample No.(s)	23432875	23432880	23432885	23432889	23432897	23432910
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		12	12	7.3	11	9.8	9.3
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	<12 M	<12 M	<12 M	<12 M	<12 M
Phenol	<0.01 mg/kg	TM062 (S)		0.0113 M	0.0114 M	0.0108 M	0.0112 M	0.0111 M	0.011 M
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M
Soil Organic Matter (SOM)	<0.35 %	TM132		36.4 #	16 #	21.2 #	26.2 #	18.1 #	25 #
pH	1 pH Units	TM133		11.2 M	11.1 M	11 M	11.1 M	11.4 M	11.2 M
Cyanide, Total	<1 mg/kg	TM153		<1 M	<1 M	<1 M	<1 M	<1 M	1.28 M
Arsenic	<0.6 mg/kg	TM181		34.3 M	8.02 M	4.28 M	7.71 M	5.41 M	7.22 M
Cadmium	<0.02 mg/kg	TM181		1.42 M	2.25 M	<0.02 M	1.58 M	0.999 M	0.792 M
Chromium	<0.9 mg/kg	TM181		259 M	206 M	300 M	137 M	226 M	164 M
Copper	<1.4 mg/kg	TM181		25.4 M	24 M	21 M	20.5 M	21.8 M	18.2 M
Iron	<1000 mg/kg	TM181		115000 #	95400 #	102000 #	64700 #	91300 #	83200 #
Lead	<0.7 mg/kg	TM181		169 M	250 M	77.6 M	166 M	108 M	89.8 M
Manganese	<0.13 mg/kg	TM181		17500 M	16000 M	12900 M	9600 M	15600 M	11900 M
Mercury	<0.14 mg/kg	TM181		<0.14 M	<0.14 M	0.153 M	<0.14 M	<0.14 M	<0.14 M
Nickel	<0.2 mg/kg	TM181		17 M	65 M	4.2 M	15 M	13.8 M	12.4 M
Selenium	<1 mg/kg	TM181		3.83 #	3.85 #	<1 #	2.22 #	3.98 #	1.97 #
Vanadium	<0.2 mg/kg	TM181		277 #	202 #	263 #	143 #	702 #	229 #
Zinc	<1.9 mg/kg	TM181		682 M	959 M	361 M	669 M	442 M	366 M

Validated

CERTIFICATE OF ANALYSIS

SDG:	201215-62	**Client Reference:**	P18-669	**Report Number:**	583598
Location:	Llanwern	**Order Number:**		**Superseded Report:**	583597

Results Legend	
#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	2BN2-19	2BN2-20	2BN2-21	2BN2-22	2BN2-23	2BN2-24
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	14/12/2020	14/12/2020	14/12/2020	14/12/2020	14/12/2020	14/12/2020
			Sample Time	.	.	.	.	.	.
			Date Received	15/12/2020	15/12/2020	15/12/2020	15/12/2020	15/12/2020	15/12/2020
			SDG Ref	201215-62	201215-62	201215-62	201215-62	201215-62	201215-62
			Lab Sample No.(s)	23432918	23432941	23432949	23432955	23432959	23432963
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		4.8	10	8.3	6.7	7.5	9.3
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	<12 M	<12 M	<12 M	<12 M	<12 M
Phenol	<0.01 mg/kg	TM062 (S)		0.0105 M	0.0222 M	<0.1 M	0.0107 M	0.0108 M	<0.01 M
Cresols	<0.01 mg/kg	TM062 (S)		0.0105 M	0.0111 M	<0.1 M	0.0107 M	0.0108 M	<0.01 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	0.0222 M	<0.15 M	0.0322 M	<0.015 M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	0.0555 M	<0.35 M	0.0536 M	<0.035 M	<0.035 M
Soil Organic Matter (SOM)	<0.35 %	TM132		13.8 #	33.1 #	30.3 #	21.7 #	24.3 #	30 #
pH	1 pH Units	TM133		10.6 M	10.9 M	10.9 M	11.3 M	11.2 M	10.7 M
Cyanide, Total	<1 mg/kg	TM153		<1 M	1.99 M	<1 M	1.81 M	1.89 M	1.39 M
Arsenic	<0.6 mg/kg	TM181		9.77 M	7.07 M	10.4 M	9.06 M	9.37 M	11.7 M
Cadmium	<0.02 mg/kg	TM181		0.0825 M	1.25 M	0.985 M	1.28 M	1.87 M	2.03 M
Chromium	<0.9 mg/kg	TM181		214 M	211 M	148 M	272 M	152 M	134 M
Copper	<1.4 mg/kg	TM181		34.3 M	19.3 M	25.8 M	26.6 M	25.7 M	22.3 M
Iron	<1000 mg/kg	TM181		163000 #	87600 #	117000 #	124000 #	99600 #	105000 #
Lead	<0.7 mg/kg	TM181		128 M	152 M	182 M	206 M	258 M	297 M
Manganese	<0.13 mg/kg	TM181		12000 M	15300 M	12000 M	17900 M	8990 M	11100 M
Mercury	<0.14 mg/kg	TM181		0.387 M	<0.14 M	<0.14 M	<0.14 M	<0.14 M	<0.14 M
Nickel	<0.2 mg/kg	TM181		20 M	12.2 M	14.9 M	13.5 M	16.5 M	18.9 M
Selenium	<1 mg/kg	TM181		<1 #	3.77 #	<1 #	3.34 #	1.79 #	<1 #
Vanadium	<0.2 mg/kg	TM181		263 #	206 #	174 #	333 #	194 #	177 #
Zinc	<1.9 mg/kg	TM181		570 M	603 M	844 M	1000 M	1210 M	1360 M

Validated

CERTIFICATE OF ANALYSIS

SDG:	201215-62	**Client Reference:**	P18-669	**Report Number:**	583598
Location:	Llanwern	**Order Number:**		**Superseded Report:**	583597

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	2BN2-25	2BN2-26	2BN2-27	2BN2-28	2BSE-15	2BSE-16
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	14/12/2020	14/12/2020	14/12/2020	14/12/2020	11/12/2020	11/12/2020
			Sample Time	.	.	.	.	.	.
			Date Received	15/12/2020	15/12/2020	15/12/2020	15/12/2020	15/12/2020	15/12/2020
			SDG Ref	201215-62	201215-62	201215-62	201215-62	201215-62	201215-62
			Lab Sample No.(s)	23432967	23432973	23432977	23432981	23432722	23432786
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		8.1	14	12	12	7.6	18
Gross Calorific Value in Dry Matter Q(V/gr/d)	<0.5 MJ/kg	SUB						3.37	2.27
Gross Calorific Value Original Q(V/gr/ar)	<0.5 MJ/kg	SUB						2.93	1.97
Net Calorific Value in Dry Matter Q(V/net/d)	<0.5 MJ/kg	SUB						3.15	2.11
Net Calorific Value in Original Q(V/net/ar)	<0.5 MJ/kg	SUB						2.44	1.53
Water Analytical M (ad)	<0.5 %	SUB						1.43	0.89
Water Gross M(ex)	<0.5 %	SUB						11.6	12.5
Water Total M(ar)	<0.5 %	SUB						12.9	13.2
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	<12 M	<12 M	<12 M	<12 M	<12 M
Phenol	<0.01 mg/kg	TM062 (S)		0.0109 M	<0.01 M	0.0113 M	0.0114 M	<0.01 M	<0.01 M
Cresols	<0.01 mg/kg	TM062 (S)		0.0109 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M
Soil Organic Matter (SOM)	<0.35 %	TM132		40.5 #	43.1 #	29 #	27.6 #	40.9 #	22.6 #
pH	1 pH Units	TM133		10.8 M	10.7 M	10.6 M	10.7 M	11.5 M	10.6 M
Cyanide, Total	<1 mg/kg	TM153		1.23 M	1.1 M	<1 M	1.25 M	1.61 M	<1 M
Arsenic	<0.6 mg/kg	TM181		11 M	10.5 M	8.09 M	9.15 M	<6 M	9.03 M
Cadmium	<0.02 mg/kg	TM181		2.54 M	3.21 M	2.84 M	2.35 M	<0.2 M	0.361 M
Chromium	<0.9 mg/kg	TM181		171 M	146 M	210 M	85.2 M	35.8 M	206 M
Copper	<1.4 mg/kg	TM181		75.8 M	38.9 M	19.8 M	20.6 M	<14 M	30.5 M
Iron	<1000 mg/kg	TM181		111000 #	112000 #	92500 #	80200 #	13100 #	114000 #
Lead	<0.7 mg/kg	TM181		358 M	403 M	346 M	286 M	7.14 M	85.6 M
Manganese	<0.13 mg/kg	TM181		10500 M	9600 M	12800 M	10900 M	23700 M	15800 M
Mercury	<0.14 mg/kg	TM181		<0.14 M	<0.14 M	<0.14 M	<0.14 M	<1.4 M	<0.14 M
Nickel	<0.2 mg/kg	TM181		16.8 M	23.3 M	14.8 M	15.3 M	<2 M	13.7 M
Selenium	<1 mg/kg	TM181		1.81 #	<1 #	2.85 #	2.92 #	<10 #	2 #
Vanadium	<0.2 mg/kg	TM181		190 #	194 #	166 #	262 #	67.7 #	254 #
Zinc	<1.9 mg/kg	TM181		1600 M	1650 M	1490 M	1330 M	21.1 M	377 M

Validated

CERTIFICATE OF ANALYSIS

SDG:	201215-62	**Client Reference:**	P18-669	**Report Number:**	583598
Location:	Llanwern	**Order Number:**		**Superseded Report:**	583597

Results Legend	
#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	2BSE-17	2BSE-18	2BSE-19	2BSE-20	2BSE-21	2BSE-36
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	11/12/2020	11/12/2020	11/12/2020	11/12/2020	11/12/2020	11/12/2020
			Sample Time	.	.	.	.	.	.
			Date Received	15/12/2020	15/12/2020	15/12/2020	15/12/2020	15/12/2020	15/12/2020
			SDG Ref	201215-62	201215-62	201215-62	201215-62	201215-62	201215-62
			Lab Sample No.(s)	23432853	23432930	23432986	23432990	23432994	23433001
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		8.5	13	8.3	11	7.7	13
Gross Calorific Value in Dry Matter Q(V/gr/d)	<0.5 MJ/kg	SUB		3.19	5.66	1.07	3.64	3.18	
Gross Calorific Value Original Q(V/gr/ar)	<0.5 MJ/kg	SUB		2.65	4.76	0.93	3.35	2.82	
Net Calorific Value in Dry Matter Q(V/net/d)	<0.5 MJ/kg	SUB		3.07	5.4	0.94	3.5	3	
Net Calorific Value in Original Q(V/net/ar)	<0.5 MJ/kg	SUB		2.16	4.18	0.52	3.04	2.4	
Water Analytical M (ad)	<0.5 %	SUB		1.33	1.36	1.02	0.59	0.87	
Water Gross M(ex)	<0.5 %	SUB		15.8	14.7	12	7.35	10.6	
Water Total M(ar)	<0.5 %	SUB		16.9	15.9	13	7.9	11.4	
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	<12 M	<12 M	<12 M	<12 M	<12 M
Phenol	<0.01 mg/kg	TM062 (S)		0.0109 M	0.0115 M	<0.01 M	<0.01 M	<0.01 M	0.0116 M
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M
Soil Organic Matter (SOM)	<0.35 %	TM132		21.9 #	26.7 #	13 #	15.7 #	12.9 #	37.9 #
pH	1 pH Units	TM133		9.84 M	11.8 M	8.89 M	10.8 M	10.6 M	11.6 M
Cyanide, Total	<1 mg/kg	TM153		5.32 M	<1 M	<1 M	<1 M	<1 M	<1 M
Arsenic	<0.6 mg/kg	TM181		7.98 M	5 M	7.95 M	8.28 M	6.24 M	7.11 M
Cadmium	<0.02 mg/kg	TM181		0.731 M	<0.02 M	1.23 M	0.307 M	0.299 M	0.383 M
Chromium	<0.9 mg/kg	TM181		450 M	300 M	226 M	240 M	452 M	285 M
Copper	<1.4 mg/kg	TM181		31.8 M	17.8 M	23.2 M	19.1 M	31.5 M	19.4 M
Iron	<1000 mg/kg	TM181		121000 #	102000 #	63500 #	120000 #	135000 #	91100 #
Lead	<0.7 mg/kg	TM181		78.7 M	32.6 M	81.1 M	68.7 M	63 M	51.8 M
Manganese	<0.13 mg/kg	TM181		21900 M	21600 M	9480 M	14400 M	24000 M	18500 M
Mercury	<0.14 mg/kg	TM181		<1.4 M	<0.14 M	<0.14 M	<0.14 M	<0.14 M	<0.14 M
Nickel	<0.2 mg/kg	TM181		15.4 M	9.33 M	19.3 M	12.8 M	10.3 M	11.7 M
Selenium	<1 mg/kg	TM181		12.6 #	4.29 #	2.6 #	1.18 #	5.76 #	6.55 #
Vanadium	<0.2 mg/kg	TM181		508 #	376 #	169 #	303 #	569 #	437 #
Zinc	<1.9 mg/kg	TM181		218 M	117 M	240 M	268 M	201 M	167 M

Validated

CERTIFICATE OF ANALYSIS

SDG:	201215-62	**Client Reference:**	P18-669	**Report Number:**	583598
Location:	Llanwern	**Order Number:**		**Superseded Report:**	583597

Results Legend

#	ISO17025 accredited.
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aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
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**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	2BSE-37	2BSE-38	2BSE-39	2BSE-40	2BSE-41	2BSE-42
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	11/12/2020	11/12/2020	11/12/2020	11/12/2020	11/12/2020	11/12/2020
			Sample Time	.	.	.	.	.	.
			Date Received	15/12/2020	15/12/2020	15/12/2020	15/12/2020	15/12/2020	15/12/2020
			SDG Ref	201215-62	201215-62	201215-62	201215-62	201215-62	201215-62
			Lab Sample No.(s)	23433006	23432728	23432735	23432740	23432745	23432753
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		8.2	15	8	8	4	5.3
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	<12 M	<12 M	<12 M	<12 M	<12 M
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.1 M	<0.01 M	<0.01 M	0.0106 M
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.1 M	<0.01 M	<0.01 M	<0.01 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M	<0.15 M	<0.015 M	<0.015 M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 M	<0.35 M	<0.035 M	<0.035 M	<0.035 M
Soil Organic Matter (SOM)	<0.35 %	TM132		15.6 #	20 #	23.6 #	14.1 #	19.3 #	20.9 #
pH	1 pH Units	TM133		10.5 M	9.77 M	11.2 M	8.98 M	10.3 M	11.4 M
Cyanide, Total	<1 mg/kg	TM153		<1 M	4.22 M	<1 M	<1 M	<1 M	<1 M
Arsenic	<0.6 mg/kg	TM181		6.2 M	21.1 M	5.1 M	8.35 M	12.6 M	6.88 M
Cadmium	<0.02 mg/kg	TM181		0.339 M	10.4 M	0.256 M	1.01 M	1.4 M	0.442 M
Chromium	<0.9 mg/kg	TM181		309 M	55.4 M	331 M	66.3 M	68.8 M	252 M
Copper	<1.4 mg/kg	TM181		17.7 M	44.2 M	18.8 M	15.9 M	26.5 M	19.6 M
Iron	<1000 mg/kg	TM181		132000 #	174000 #	123000 #	75600 #	134000 #	113000 #
Lead	<0.7 mg/kg	TM181		63.1 M	1390 M	40.8 M	69.3 M	142 M	57.9 M
Manganese	<0.13 mg/kg	TM181		17300 M	5230 M	21200 M	6350 M	6700 M	18900 M
Mercury	<0.14 mg/kg	TM181		<0.14 M	<1.4 M	<0.14 M	<0.14 M	<1.4 M	<0.14 M
Nickel	<0.2 mg/kg	TM181		9.94 M	40.5 M	12 M	20.8 M	29.1 M	11.9 M
Selenium	<1 mg/kg	TM181		3.84 #	<10 #	5.68 #	<1 #	<10 #	3.69 #
Vanadium	<0.2 mg/kg	TM181		302 #	112 #	591 #	98.4 #	134 #	248 #
Zinc	<1.9 mg/kg	TM181		242 M	4980 M	148 M	222 M	453 M	197 M

Validated

CERTIFICATE OF ANALYSIS

SDG:	201215-62	**Client Reference:**	P18-669	**Report Number:**	583598
Location:	Llanwern	**Order Number:**		**Superseded Report:**	583597

PAH by GCMS

Results Legend	
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diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	2BN-1	2BN-2	2BN-3	2BN-4	2BN-5	2BN-6
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	14/12/2020	14/12/2020	14/12/2020	14/12/2020	14/12/2020	14/12/2020
			Sample Time	.	.	.	.	.	.
			Date Received	15/12/2020	15/12/2020	15/12/2020	15/12/2020	15/12/2020	15/12/2020
			SDG Ref	201215-62	201215-62	201215-62	201215-62	201215-62	201215-62
			Lab Sample No.(s)	23432757	23432763	23432768	23432776	23432780	23432790
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		80.6	80	82.3	86	80.2	80.9
Acenaphthene-d10 % recovery**	%	TM218		83.4	81.4	83.3	86.5	82.1	83.7
Phenanthrene-d10 % recovery**	%	TM218		83.8	86.3	87.8	83.8	84.4	85.1
Chrysene-d12 % recovery**	%	TM218		89.9	92.5	78.4	87.6	89.4	92.3
Perylene-d12 % recovery**	%	TM218		83.6	87.7	80.1	85.4	87.6	85
Naphthalene	<9 µg/kg	TM218		2870 M	2390 M	2730 M	2240 M	2420 M	2790 M
Acenaphthylene	<12 µg/kg	TM218		1410 M	653 M	786 M	813 M	614 M	718 M
Acenaphthene	<8 µg/kg	TM218		157 M	115 M	117 M	98.8 M	107 M	157 M
Fluorene	<10 µg/kg	TM218		814 M	590 M	528 M	534 M	436 M	537 M
Phenanthrene	<15 µg/kg	TM218		8900 M	4230 M	3500 M	4920 M	3050 M	3550 M
Anthracene	<16 µg/kg	TM218		2060 M	1350 M	1150 M	1510 M	1030 M	1090 M
Fluoranthene	<17 µg/kg	TM218		16800 M	7570 M	7560 M	9390 M	6300 M	6070 M
Pyrene	<15 µg/kg	TM218		11800 M	5410 M	6210 M	7100 M	4920 M	4310 M
Benz(a)anthracene	<14 µg/kg	TM218		7070 M	3420 M	3670 M	4240 M	3120 M	2920 M
Chrysene	<10 µg/kg	TM218		6730 M	2990 M	3260 M	3970 M	2690 M	2650 M
Benzo(b)fluoranthene	<15 µg/kg	TM218		8310 M	4410 M	3500 M	4430 M	3870 M	3960 M
Benzo(k)fluoranthene	<14 µg/kg	TM218		3090 M	1640 M	1620 M	1480 M	1330 M	1240 M
Benzo(a)pyrene	<15 µg/kg	TM218		6250 M	2670 M	3210 M	3450 M	2470 M	2460 M
Indeno(1,2,3-cd)pyrene	<18 µg/kg	TM218		5090 M	2080 M	2450 M	2360 M	1950 M	1810 M
Dibenzo(a,h)anthracene	<23 µg/kg	TM218		1110 M	304 M	536 M	562 M	305 M	423 M
Benzo(g,h,i)perylene	<24 µg/kg	TM218		4720 M	1750 M	2170 M	2380 M	1560 M	1730 M
PAH, Total Detected USEPA 16	<118 µg/kg	TM218		87200	41600	43000	49500	36200	36400

Validated

CERTIFICATE OF ANALYSIS

SDG: 201215-62 **Client Reference:** P18-669 **Report Number:** 583598
Location: Llanwern **Order Number:** **Superseded Report:** 583597

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	2BN-7	2BN-8	2BN-9	2BN-10	2BN2-1	2BN2-2
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	14/12/2020	14/12/2020	14/12/2020	14/12/2020	14/12/2020	14/12/2020
			Sample Time	.	.	.	.	.	.
			Date Received	15/12/2020	15/12/2020	15/12/2020	15/12/2020	15/12/2020	15/12/2020
			SDG Ref	201215-62	201215-62	201215-62	201215-62	201215-62	201215-62
			Lab Sample No.(s)	23432795	23432801	23432805	23432810	23432817	23432823
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		81.4	81.7	83	80.6	80.6	78.2
Acenaphthene-d10 % recovery**	%	TM218		81.9	81.2	87.5	80.8	81.8	80.7
Phenanthrene-d10 % recovery**	%	TM218		89.4	86.4	87.5	83.8	85.4	86
Chrysene-d12 % recovery**	%	TM218		77.2	77.6	98.4	78.7	75.6	76.1
Perylene-d12 % recovery**	%	TM218		81.4	78.8	91	82.9	78.3	79
Naphthalene	<9 µg/kg	TM218		4060 M	2300 M	2250 M	1940 M	2700 M	2870 M
Acenaphthylene	<12 µg/kg	TM218		1110 M	674 M	1050 M	476 M	843 M	792 M
Acenaphthene	<8 µg/kg	TM218		177 M	121 M	153 M	87 M	141 M	143 M
Fluorene	<10 µg/kg	TM218		826 M	489 M	755 M	330 M	724 M	616 M
Phenanthrene	<15 µg/kg	TM218		5670 M	3390 M	5460 M	2100 M	5010 M	4480 M
Anthracene	<16 µg/kg	TM218		1590 M	1070 M	1910 M	576 M	1440 M	1390 M
Fluoranthene	<17 µg/kg	TM218		11800 M	6870 M	11000 M	3960 M	8500 M	8310 M
Pyrene	<15 µg/kg	TM218		8310 M	5380 M	8580 M	3010 M	6280 M	6300 M
Benz(a)anthracene	<14 µg/kg	TM218		5240 M	3180 M	5110 M	1880 M	3880 M	3810 M
Chrysene	<10 µg/kg	TM218		4040 M	2600 M	4960 M	1410 M	3490 M	3340 M
Benzo(b)fluoranthene	<15 µg/kg	TM218		4740 M	3330 M	6520 M	1880 M	5870 M	5790 M
Benzo(k)fluoranthene	<14 µg/kg	TM218		1680 M	1220 M	2240 M	750 M	1910 M	1650 M
Benzo(a)pyrene	<15 µg/kg	TM218		4610 M	2800 M	4200 M	1640 M	3460 M	3350 M
Indeno(1,2,3-cd)pyrene	<18 µg/kg	TM218		3700 M	2140 M	3010 M	1310 M	2780 M	2800 M
Dibenzo(a,h)anthracene	<23 µg/kg	TM218		849 M	467 M	704 M	276 M	504 M	492 M
Benzo(g,h,i)perylene	<24 µg/kg	TM218		3210 M	1930 M	2840 M	1100 M	2250 M	2200 M
PAH, Total Detected USEPA 16	<118 µg/kg	TM218		61600	38000	60700	22700	49800	48300

Validated

CERTIFICATE OF ANALYSIS

SDG:	201215-62	**Client Reference:**	P18-669	**Report Number:**	583598
Location:	Llanwern	**Order Number:**		**Superseded Report:**	583597

PAH by GCMS

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	2BN2-3	2BN2-4	2BN2-5	2BN2-6	2BN2-7	2BN2-12
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	14/12/2020	14/12/2020	14/12/2020	14/12/2020	14/12/2020	14/12/2020
			Sample Time	.	.	.	.	.	.
			Date Received	15/12/2020	15/12/2020	15/12/2020	15/12/2020	15/12/2020	15/12/2020
			SDG Ref	201215-62	201215-62	201215-62	201215-62	201215-62	201215-62
			Lab Sample No.(s)	23432829	23432837	23432845	23432860	23432866	23432871
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		77.6	86.4	74.2	78.6	79	76.2
Acenaphthene-d10 % recovery**	%	TM218		81	87.3	75.5	84.7	86.5	81.7
Phenanthrene-d10 % recovery**	%	TM218		90.1	91.1	76	93.6	83	90.5
Chrysene-d12 % recovery**	%	TM218		84.2	78.4	70.3	81.1	72.5	80.9
Perylene-d12 % recovery**	%	TM218		71.7	78.5	70.4	70.4	81.5	70.9
Naphthalene	<9 µg/kg	TM218		2310 M	3060 M	10100 M	5580 M	18100 M	2750 M
Acenaphthylene	<12 µg/kg	TM218		766 M	1640 M	5900 M	1970 M	19700 M	1000 M
Acenaphthene	<8 µg/kg	TM218		139 M	279 M	308 M	410 M	28900 M	129 M
Fluorene	<10 µg/kg	TM218		640 M	1740 M	2760 M	1590 M	69100 M	667 M
Phenanthrene	<15 µg/kg	TM218		4000 M	11900 M	20900 M	11200 M	325000 M	4980 M
Anthracene	<16 µg/kg	TM218		1850 M	3280 M	13600 M	4630 M	108000 M	1910 M
Fluoranthene	<17 µg/kg	TM218		6800 M	22100 M	76300 M	19300 M	347000 M	8700 M
Pyrene	<15 µg/kg	TM218		5380 M	16100 M	56200 M	15300 M	218000 M	6380 M
Benz(a)anthracene	<14 µg/kg	TM218		2980 M	8580 M	40900 M	8440 M	112000 M	3640 M
Chrysene	<10 µg/kg	TM218		3030 M	6780 M	36100 M	8400 M	90400 M	3720 M
Benzo(b)fluoranthene	<15 µg/kg	TM218		3640 M	11000 M	49000 M	10700 M	136000 M	5320 M
Benzo(k)fluoranthene	<14 µg/kg	TM218		1090 M	3720 M	15600 M	2980 M	41500 M	1390 M
Benzo(a)pyrene	<15 µg/kg	TM218		2310 M	6380 M	27900 M	6350 M	79400 M	3060 M
Indeno(1,2,3-cd)pyrene	<18 µg/kg	TM218		1750 M	4890 M	21700 M	5210 M	65400 M	2580 M
Dibenzo(a,h)anthracene	<23 µg/kg	TM218		368 M	907 M	4550 M	1050 M	11700 M	507 M
Benzo(g,h,i)perylene	<24 µg/kg	TM218		1530 M	3950 M	16600 M	4200 M	50900 M	2040 M
PAH, Total Detected USEPA 16	<118 µg/kg	TM218		38600	106000	399000	107000	1720000	48800

Validated

CERTIFICATE OF ANALYSIS

SDG: 201215-62 **Client Reference:** P18-669 **Report Number:** 583598
Location: Llanwern **Order Number:** **Superseded Report:** 583597

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	2BN2-13	2BN2-14	2BN2-15	2BN2-16	2BN2-17	2BN2-18
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	14/12/2020	14/12/2020	14/12/2020	14/12/2020	14/12/2020	14/12/2020
			Sample Time	.	.	.	.	.	.
			Date Received	15/12/2020	15/12/2020	15/12/2020	15/12/2020	15/12/2020	15/12/2020
			SDG Ref	201215-62	201215-62	201215-62	201215-62	201215-62	201215-62
			Lab Sample No.(s)	23432875	23432880	23432885	23432889	23432897	23432910
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		80.7	82.3	79.4	81.9	82	81.8
Acenaphthene-d10 % recovery**	%	TM218		80.5	85.2	82.1	85.7	83.2	85
Phenanthrene-d10 % recovery**	%	TM218		83.5	87.9	85.9	86.5	82	88
Chrysene-d12 % recovery**	%	TM218		83.4	92.6	76	90.8	85.7	78.5
Perylene-d12 % recovery**	%	TM218		80.7	84.5	79.9	83.3	85.2	78.2
Naphthalene	<9 µg/kg	TM218		2240 M	2230 M	3410 M	2580 M	2310 M	1660 M
Acenaphthylene	<12 µg/kg	TM218		600 M	643 M	854 M	857 M	712 M	632 M
Acenaphthene	<8 µg/kg	TM218		107 M	108 M	175 M	156 M	125 M	144 M
Fluorene	<10 µg/kg	TM218		540 M	447 M	1070 M	691 M	528 M	579 M
Phenanthrene	<15 µg/kg	TM218		4070 M	3290 M	5950 M	4760 M	3560 M	3540 M
Anthracene	<16 µg/kg	TM218		1090 M	953 M	1430 M	1630 M	1140 M	986 M
Fluoranthene	<17 µg/kg	TM218		6830 M	6050 M	8230 M	8220 M	6360 M	5990 M
Pyrene	<15 µg/kg	TM218		4910 M	4870 M	6120 M	6100 M	4890 M	4680 M
Benz(a)anthracene	<14 µg/kg	TM218		3260 M	3010 M	3640 M	3730 M	3180 M	2680 M
Chrysene	<10 µg/kg	TM218		2810 M	2600 M	3090 M	3210 M	2610 M	2480 M
Benzo(b)fluoranthene	<15 µg/kg	TM218		4300 M	3170 M	5210 M	3870 M	3550 M	3850 M
Benzo(k)fluoranthene	<14 µg/kg	TM218		1400 M	1210 M	1620 M	1540 M	1160 M	1230 M
Benzo(a)pyrene	<15 µg/kg	TM218		2580 M	2440 M	3010 M	3000 M	2680 M	2220 M
Indeno(1,2,3-cd)pyrene	<18 µg/kg	TM218		2140 M	1780 M	2380 M	2220 M	2100 M	1800 M
Dibenzo(a,h)anthracene	<23 µg/kg	TM218		304 M	396 M	461 M	517 M	448 M	264 M
Benzo(g,h,i)perylene	<24 µg/kg	TM218		1570 M	1700 M	2020 M	1970 M	1940 M	1430 M
PAH, Total Detected USEPA 16	<118 µg/kg	TM218		38700	34900	48700	45000	37300	34200

Validated

CERTIFICATE OF ANALYSIS

SDG:	201215-62	**Client Reference:**	P18-669	**Report Number:**	583598
Location:	Llanwern	**Order Number:**		**Superseded Report:**	583597

PAH by GCMS

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	2BN2-19	2BN2-20	2BN2-21	2BN2-22	2BN2-23	2BN2-24
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	14/12/2020	14/12/2020	14/12/2020	14/12/2020	14/12/2020	14/12/2020
			Sample Time	.	.	.	.	.	.
			Date Received	15/12/2020	15/12/2020	15/12/2020	15/12/2020	15/12/2020	15/12/2020
			SDG Ref	201215-62	201215-62	201215-62	201215-62	201215-62	201215-62
			Lab Sample No.(s)	23432918	23432941	23432949	23432955	23432959	23432963
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		87.7	78.4	76.4	77.8	77.1	75.8
Acenaphthene-d10 % recovery**	%	TM218		90.4	83.1	84.3	79.1	84.7	78.9
Phenanthrene-d10 % recovery**	%	TM218		93	88.5	93.5	80.7	92	77.4
Chrysene-d12 % recovery**	%	TM218		80.3	73.1	83.7	70.6	79.8	88.8
Perylene-d12 % recovery**	%	TM218		82.5	77.5	73.7	74.1	70.2	84.9
Naphthalene	<9 µg/kg	TM218		3190 M	20000 M	7870 M	7510 M	5410 M	6180 M
Acenaphthylene	<12 µg/kg	TM218		7570 M	2790 M	2120 M	2180 M	1970 M	3890 M
Acenaphthene	<8 µg/kg	TM218		710 M	539 M	293 M	481 M	410 M	484 M
Fluorene	<10 µg/kg	TM218		12200 M	3210 M	1840 M	1920 M	1410 M	3950 M
Phenanthrene	<15 µg/kg	TM218		64800 M	18600 M	13400 M	13300 M	10800 M	29300 M
Anthracene	<16 µg/kg	TM218		18700 M	6570 M	5270 M	4810 M	3550 M	7850 M
Fluoranthene	<17 µg/kg	TM218		84800 M	27900 M	24600 M	23000 M	19800 M	37000 M
Pyrene	<15 µg/kg	TM218		56600 M	21100 M	17800 M	18400 M	15500 M	27700 M
Benz(a)anthracene	<14 µg/kg	TM218		30900 M	13500 M	10100 M	11000 M	8450 M	14400 M
Chrysene	<10 µg/kg	TM218		22900 M	10700 M	8490 M	9330 M	8200 M	13000 M
Benzo(b)fluoranthene	<15 µg/kg	TM218		31100 M	16500 M	12000 M	16900 M	10500 M	17100 M
Benzo(k)fluoranthene	<14 µg/kg	TM218		10800 M	6480 M	3510 M	4670 M	3310 M	5480 M
Benzo(a)pyrene	<15 µg/kg	TM218		19300 M	10800 M	7630 M	9670 M	6830 M	12400 M
Indeno(1,2,3-cd)pyrene	<18 µg/kg	TM218		14400 M	8620 M	6050 M	8020 M	5860 M	9280 M
Dibenzo(a,h)anthracene	<23 µg/kg	TM218		2760 M	1640 M	1260 M	1380 M	1100 M	1900 M
Benzo(g,h,i)perylene	<24 µg/kg	TM218		10400 M	6730 M	4980 M	6290 M	4410 M	8800 M
PAH, Total Detected USEPA 16	<118 µg/kg	TM218		391000	176000	127000	139000	107000	199000

Validated

CERTIFICATE OF ANALYSIS

SDG: 201215-62 **Client Reference:** P18-669 **Report Number:** 583598
Location: Llanwern **Order Number:** **Superseded Report:** 583597

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	2BN2-25	2BN2-26	2BN2-27	2BN2-28	2BSE-15	2BSE-16
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	14/12/2020	14/12/2020	14/12/2020	14/12/2020	11/12/2020	11/12/2020
			Sample Time	.	.	.	.	.	.
			Date Received	15/12/2020	15/12/2020	15/12/2020	15/12/2020	15/12/2020	15/12/2020
			SDG Ref	201215-62	201215-62	201215-62	201215-62	201215-62	201215-62
			Lab Sample No.(s)	23432967	23432973	23432977	23432981	23432722	23432786
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		77.3	80.1	83.7	77.3	78.6	81.2
Acenaphthene-d10 % recovery**	%	TM218		80.9	82.9	83.7	80.2	81	82.7
Phenanthrene-d10 % recovery**	%	TM218		83.9	82.8	82.4	84.1	85.2	86.2
Chrysene-d12 % recovery**	%	TM218		91.7	88	83.4	87.8	74.1	76.6
Perylene-d12 % recovery**	%	TM218		88.2	83	80.6	81	77.4	82.6
Naphthalene	<9 µg/kg	TM218		6090 M	3190 M	2620 M	2600 M	3370 M	2950 M
Acenaphthylene	<12 µg/kg	TM218		1740 M	1030 M	762 M	936 M	963 M	1220 M
Acenaphthene	<8 µg/kg	TM218		297 M	205 M	151 M	204 M	149 M	176 M
Fluorene	<10 µg/kg	TM218		1200 M	667 M	465 M	1110 M	576 M	1310 M
Phenanthrene	<15 µg/kg	TM218		8210 M	4450 M	2900 M	6590 M	5500 M	10200 M
Anthracene	<16 µg/kg	TM218		2810 M	1580 M	957 M	1870 M	1400 M	2490 M
Fluoranthene	<17 µg/kg	TM218		16000 M	9380 M	6430 M	10400 M	9240 M	13600 M
Pyrene	<15 µg/kg	TM218		12500 M	7390 M	5020 M	7880 M	7250 M	9440 M
Benz(a)anthracene	<14 µg/kg	TM218		7760 M	4580 M	3200 M	4630 M	4120 M	5370 M
Chrysene	<10 µg/kg	TM218		7080 M	4370 M	2780 M	4720 M	3290 M	4870 M
Benzo(b)fluoranthene	<15 µg/kg	TM218		9910 M	6310 M	4210 M	5730 M	5930 M	7130 M
Benzo(k)fluoranthene	<14 µg/kg	TM218		3350 M	1940 M	1410 M	1760 M	1920 M	2260 M
Benzo(a)pyrene	<15 µg/kg	TM218		6640 M	3820 M	2860 M	3600 M	3510 M	3980 M
Indeno(1,2,3-cd)pyrene	<18 µg/kg	TM218		5070 M	2720 M	2220 M	2590 M	2890 M	3400 M
Dibenzo(a,h)anthracene	<23 µg/kg	TM218		1170 M	618 M	498 M	621 M	442 M	570 M
Benzo(g,h,i)perylene	<24 µg/kg	TM218		4690 M	2670 M	2150 M	2570 M	2320 M	2580 M
PAH, Total Detected USEPA 16	<118 µg/kg	TM218		94600	54900	38600	57800	52900	71500

Validated

CERTIFICATE OF ANALYSIS

SDG: 201215-62 **Client Reference:** P18-669 **Report Number:** 583598
Location: Llanwern **Order Number:** **Superseded Report:** 583597

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	2BSE-17	2BSE-18	2BSE-19	2BSE-20	2BSE-21	2BSE-36
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	11/12/2020	11/12/2020	11/12/2020	11/12/2020	11/12/2020	11/12/2020
			Sample Time	.	.	.	.	.	.
			Date Received	15/12/2020	15/12/2020	15/12/2020	15/12/2020	15/12/2020	15/12/2020
			SDG Ref	201215-62	201215-62	201215-62	201215-62	201215-62	201215-62
			Lab Sample No.(s)	23432853	23432930	23432986	23432990	23432994	23433001
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		78.1	79.4	77.4	84.3	84.9	81.9
Acenaphthene-d10 % recovery**	%	TM218		83.9	82.5	82.4	80.5	81.3	82.2
Phenanthrene-d10 % recovery**	%	TM218		82.5	87.1	83.9	83.8	81.4	86.8
Chrysene-d12 % recovery**	%	TM218		78.6	75	90.1	82.5	80.6	77.4
Perylene-d12 % recovery**	%	TM218		71.9	78	86.6	84.1	84.1	79.2
Naphthalene	<9 µg/kg	TM218		6850 M	5580 M	945 M	1050 M	3440 M	2860 M
Acenaphthylene	<12 µg/kg	TM218		940 M	1180 M	375 M	337 M	829 M	694 M
Acenaphthene	<8 µg/kg	TM218		77.2 M	156 M	55.4 M	49.6 M	82.3 M	118 M
Fluorene	<10 µg/kg	TM218		695 M	864 M	260 M	252 M	509 M	487 M
Phenanthrene	<15 µg/kg	TM218		3990 M	7260 M	2460 M	2100 M	5030 M	4380 M
Anthracene	<16 µg/kg	TM218		2200 M	1850 M	556 M	578 M	1270 M	1670 M
Fluoranthene	<17 µg/kg	TM218		6800 M	10400 M	4030 M	3230 M	7470 M	7310 M
Pyrene	<15 µg/kg	TM218		4990 M	7790 M	2870 M	2340 M	5540 M	5450 M
Benz(a)anthracene	<14 µg/kg	TM218		3160 M	4350 M	1840 M	1470 M	3160 M	3230 M
Chrysene	<10 µg/kg	TM218		3450 M	3480 M	1760 M	1380 M	3270 M	2910 M
Benzo(b)fluoranthene	<15 µg/kg	TM218		4750 M	5870 M	2110 M	2090 M	4380 M	4580 M
Benzo(k)fluoranthene	<14 µg/kg	TM218		1450 M	1820 M	760 M	756 M	1610 M	1310 M
Benzo(a)pyrene	<15 µg/kg	TM218		2740 M	3480 M	1490 M	1290 M	2800 M	2750 M
Indeno(1,2,3-cd)pyrene	<18 µg/kg	TM218		2230 M	2730 M	1090 M	968 M	2200 M	2200 M
Dibenzo(a,h)anthracene	<23 µg/kg	TM218		476 M	484 M	240 M	204 M	451 M	387 M
Benzo(g,h,i)perylene	<24 µg/kg	TM218		1900 M	2370 M	1040 M	867 M	1880 M	1920 M
PAH, Total Detected USEPA 16	<118 µg/kg	TM218		46700	59700	21900	18900	43900	42200

Validated

CERTIFICATE OF ANALYSIS

SDG: 201215-62 **Client Reference:** P18-669 **Report Number:** 583598
Location: Llanwern **Order Number:** **Superseded Report:** 583597

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	2BSE-37	2BSE-38	2BSE-39	2BSE-40	2BSE-41	2BSE-42
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	11/12/2020	11/12/2020	11/12/2020	11/12/2020	11/12/2020	11/12/2020
			Sample Time	.	.	.	.	.	.
			Date Received	15/12/2020	15/12/2020	15/12/2020	15/12/2020	15/12/2020	15/12/2020
			SDG Ref	201215-62	201215-62	201215-62	201215-62	201215-62	201215-62
			Lab Sample No.(s)	23433006	23432728	23432735	23432740	23432745	23432753
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		85.4	80.6	80.9	77.3	88.4	86.5
Acenaphthene-d10 % recovery**	%	TM218		87.5	83.2	83.1	83.3	85.8	85.3
Phenanthrene-d10 % recovery**	%	TM218		92.1	88.6	85.2	91.2	88.3	89.9
Chrysene-d12 % recovery**	%	TM218		76.4	74.7	76.7	83.4	83.6	89.6
Perylene-d12 % recovery**	%	TM218		80.1	73.4	78.9	75.1	85.8	90.7
Naphthalene	<9 µg/kg	TM218		4240 M	11300 M	4720 M	418 M	854 M	2630 M
Acenaphthylene	<12 µg/kg	TM218		1350 M	2030 M	993 M	214 M	314 M	745 M
Acenaphthene	<8 µg/kg	TM218		237 M	142 M	138 M	28.9 M	49.4 M	71.6 M
Fluorene	<10 µg/kg	TM218		1370 M	1210 M	782 M	197 M	268 M	581 M
Phenanthrene	<15 µg/kg	TM218		13500 M	8020 M	6310 M	1650 M	2030 M	4400 M
Anthracene	<16 µg/kg	TM218		3420 M	2530 M	1390 M	333 M	538 M	1120 M
Fluoranthene	<17 µg/kg	TM218		18200 M	12800 M	7930 M	2220 M	3230 M	5960 M
Pyrene	<15 µg/kg	TM218		12600 M	9610 M	5870 M	1490 M	2290 M	4380 M
Benz(a)anthracene	<14 µg/kg	TM218		6610 M	5930 M	3230 M	833 M	1480 M	2850 M
Chrysene	<10 µg/kg	TM218		5730 M	5100 M	2910 M	747 M	1300 M	2390 M
Benzo(b)fluoranthene	<15 µg/kg	TM218		8530 M	8520 M	4590 M	1010 M	2010 M	3740 M
Benzo(k)fluoranthene	<14 µg/kg	TM218		2580 M	2290 M	1600 M	337 M	718 M	1370 M
Benzo(a)pyrene	<15 µg/kg	TM218		4910 M	5070 M	2740 M	605 M	1250 M	2370 M
Indeno(1,2,3-cd)pyrene	<18 µg/kg	TM218		4100 M	3880 M	2260 M	511 M	1010 M	1900 M
Dibenzo(a,h)anthracene	<23 µg/kg	TM218		713 M	740 M	341 M	99.1 M	214 M	412 M
Benzo(g,h,i)perylene	<24 µg/kg	TM218		3070 M	3260 M	1840 M	389 M	873 M	1620 M
PAH, Total Detected USEPA 16	<118 µg/kg	TM218		91200	82500	47600	11100	18400	36500

Validated

CERTIFICATE OF ANALYSIS

SDG:	201215-62	**Client Reference:**	P18-669	**Report Number:**	583598
Location:	Llanwern	**Order Number:**		**Superseded Report:**	583597

TPH CWG (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	2BN-1	2BN-2	2BN-3	2BN-4	2BN-5	2BN-6
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	14/12/2020	14/12/2020	14/12/2020	14/12/2020	14/12/2020	14/12/2020
			Sample Time	.	.	.	.	.	.
			Date Received	15/12/2020	15/12/2020	15/12/2020	15/12/2020	15/12/2020	15/12/2020
			SDG Ref	201215-62	201215-62	201215-62	201215-62	201215-62	201215-62
			Lab Sample No.(s)	23432757	23432763	23432768	23432776	23432780	23432790
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		48.4 4 @	29 4 @	18.7 4 @	20.2 4 @	73.3 @	28.7 4 @
Aliphatics >C5-C6	<10 µg/kg	TM089		11.1 4 @	<10 4 @	<10 4 @	<10 4 @	<10 @	23 4 @
Aliphatics >C6-C8	<10 µg/kg	TM089		46.6 4 @	<10 4 @	<10 4 @	<10 4 @	<10 @	48.1 4 @
Aliphatics >C8-C10	<10 µg/kg	TM089		52.2 4 @	<10 4 @	<10 4 @	<10 4 @	<10 @	59 4 @
Aliphatics >C10-C12	<1000 µg/kg	TM414		1490	1420	<1000	<1000	1180	1560
Aliphatics >C12-C16	<1000 µg/kg	TM414		3740	4650	4330	3740	2500	3790
Aliphatics >C16-C21	<1000 µg/kg	TM414		10100	16100	21300	9870	9670	12000
Aliphatics >C21-C35	<1000 µg/kg	TM414		25900	37300	50400	29700	26200	33800
Aliphatics >C35-C44	<1000 µg/kg	TM414		6690	10300	12500	6010	7680	8050
Total Aliphatics >C10-C44	<5000 µg/kg	TM414		48000	69700	89300	50200	47200	59200
Total Aliphatics & Aromatics >C10-C44	<10000 µg/kg	TM414		273000	335000	304000	344000	254000	363000
Aromatics >EC5-EC7	<10 µg/kg	TM089		<10 4 @	<10 4 @	<10 4 @	<10 4 @	<10 @	<10 4 @
Aromatics >EC7-EC8	<10 µg/kg	TM089		<10 4 @	<10 4 @	<10 4 @	<10 4 @	<10 @	<10 4 @
Aromatics >EC8-EC10	<10 µg/kg	TM089		34.4 4 @	<10 4 @	<10 4 @	<10 4 @	<10 @	39.3 4 @
Aromatics > EC10-EC12	<1000 µg/kg	TM414		5660	7630	4930	4820	3660	6590
Aromatics > EC12-EC16	<1000 µg/kg	TM414		8490	11500	8730	10600	8010	14800
Aromatics > EC16-EC21	<1000 µg/kg	TM414		51400	57300	54600	75700	54300	82100
Aromatics > EC21-EC35	<1000 µg/kg	TM414		139000	166000	126000	180000	119000	171000
Aromatics >EC35-EC44	<1000 µg/kg	TM414		19800	23400	20100	22800	21500	29300
Aromatics > EC40-EC44	<1000 µg/kg	TM414		2560	4170	3520	2790	2860	4020
Total Aromatics > EC10-EC44	<5000 µg/kg	TM414		225000	265000	214000	294000	207000	304000
Total Aliphatics & Aromatics >C5-C44	<10000 µg/kg	TM414		273000	335000	304000	344000	254000	363000
Total Aliphatics >C5-C10	<50 µg/kg	TM089		110 4 @	<50 4 @	<50 4 @	<50 4 @	<50 @	130 4 @
Total Aromatics >EC5-EC10	<50 µg/kg	TM089		<50 4 @	<50 4 @	<50 4 @	<50 4 @	<50 @	<50 4 @
GRO >C5-C10	<20 µg/kg	TM089		110 4 @	<20 4 @	<20 4 @	<20 4 @	<20 @	130 4 @

Validated

CERTIFICATE OF ANALYSIS

SDG: 201215-62 **Client Reference:** P18-669 **Report Number:** 583598
Location: Llanwern **Order Number:** **Superseded Report:** 583597

TPH CWG (S)

Results Legend	
#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	2BN-7	2BN-8	2BN-9	2BN-10	2BN2-1	2BN2-2
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	14/12/2020	14/12/2020	14/12/2020	14/12/2020	14/12/2020	14/12/2020
			Sample Time	.	.	.	.	.	.
			Date Received	15/12/2020	15/12/2020	15/12/2020	15/12/2020	15/12/2020	15/12/2020
			SDG Ref	201215-62	201215-62	201215-62	201215-62	201215-62	201215-62
			Lab Sample No.(s)	23432795	23432801	23432805	23432810	23432817	23432823
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		28.6 4 @	20.1 4 @	17.3 4 @	48.6 4 @	33.3 4	31.2 4 @
Aliphatics >C5-C6	<10 µg/kg	TM089		16.1 4 @	12.1 4 @	<10 4 @	<10 4 @	45.1 4	11.3 4 @
Aliphatics >C6-C8	<10 µg/kg	TM089		23 4 @	12.1 4 @	<10 4 @	<10 4 @	35.2 4	11.3 4 @
Aliphatics >C8-C10	<10 µg/kg	TM089		18.4 4 @	10.9 4 @	<10 4 @	<10 4 @	33 4	<10 4 @
Aliphatics >C10-C12	<1000 µg/kg	TM414		1060	<1000	<1000	<1000	<1000	<1000
Aliphatics >C12-C16	<1000 µg/kg	TM414		3070	4140	3310	1350	4270	4690
Aliphatics >C16-C21	<1000 µg/kg	TM414		8860	20900	11200	5830	35600	26400
Aliphatics >C21-C35	<1000 µg/kg	TM414		23000	48700	40900	18100	46300	44700
Aliphatics >C35-C44	<1000 µg/kg	TM414		5490	12200	30300	4170	10900	9930
Total Aliphatics >C10-C44	<5000 µg/kg	TM414		41500	86700	86500	29600	97600	86200
Total Aliphatics & Aromatics >C10-C44	<10000 µg/kg	TM414		307000	260000	230000	128000	316000	232000
Aromatics >EC5-EC7	<10 µg/kg	TM089		<10 4 @	<10 4 @	<10 4 @	<10 4 @	<10 4	<10 4 @
Aromatics >EC7-EC8	<10 µg/kg	TM089		<10 4 @	<10 4 @	<10 4 @	<10 4 @	<10 4	<10 4 @
Aromatics >EC8-EC10	<10 µg/kg	TM089		11.5 4 @	<10 4 @	<10 4 @	<10 4 @	22 4	<10 4 @
Aromatics > EC10-EC12	<1000 µg/kg	TM414		4760	3510	2830	2560	6560	3680
Aromatics > EC12-EC16	<1000 µg/kg	TM414		9090	6050	6370	3550	10400	6250
Aromatics > EC16-EC21	<1000 µg/kg	TM414		73700	40800	34800	25400	55500	32200
Aromatics > EC21-EC35	<1000 µg/kg	TM414		159000	110000	88900	59800	132000	93300
Aromatics >EC35-EC44	<1000 µg/kg	TM414		19800	12200	10400	7040	14200	9900
Aromatics > EC40-EC44	<1000 µg/kg	TM414		2250	2390	1530	1170	2750	1540
Total Aromatics > EC10-EC44	<5000 µg/kg	TM414		266000	173000	143000	98400	218000	145000
Total Aliphatics & Aromatics >C5-C44	<10000 µg/kg	TM414		307000	260000	230000	128000	316000	232000
Total Aliphatics >C5-C10	<50 µg/kg	TM089		57.5 4 @	<50 4 @	<50 4 @	<50 4 @	113 4	<50 4 @
Total Aromatics >EC5-EC10	<50 µg/kg	TM089		<50 4 @	<50 4 @	<50 4 @	<50 4 @	<50 4	<50 4 @
GRO >C5-C10	<20 µg/kg	TM089		57.5 4 @	<20 4 @	<20 4 @	<20 4 @	113 4	<20 4 @

Validated

CERTIFICATE OF ANALYSIS

SDG: 201215-62 **Client Reference:** P18-669 **Report Number:** 583598
Location: Llanwern **Order Number:** **Superseded Report:** 583597

TPH CWG (S)

Results Legend	
#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	2BN2-3	2BN2-4	2BN2-5	2BN2-6	2BN2-7	2BN2-12
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	14/12/2020	14/12/2020	14/12/2020	14/12/2020	14/12/2020	14/12/2020
			Sample Time	.	.	.	.	.	.
			Date Received	15/12/2020	15/12/2020	15/12/2020	15/12/2020	15/12/2020	15/12/2020
			SDG Ref	201215-62	201215-62	201215-62	201215-62	201215-62	201215-62
			Lab Sample No.(s)	23432829	23432837	23432845	23432860	23432866	23432871
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		30.5 4 @	33.2 4	37.7 4 @	34.3 4 @	44.7 4 @	16.9 4 @
Aliphatics >C5-C6	<10 µg/kg	TM089		<10 4 @	<10 4	37.9 4 @	17.8 4 @	20.9 4 @	54.4 4 @
Aliphatics >C6-C8	<10 µg/kg	TM089		<10 4 @	<10 4	47.7 4 @	25.5 4 @	20.9 4 @	28.9 4 @
Aliphatics >C8-C10	<10 µg/kg	TM089		<10 4 @	<10 4	43.3 4 @	22.2 4 @	16.5 4 @	21.1 4 @
Aliphatics >C10-C12	<1000 µg/kg	TM414		<1000	1510	<1000	<1000	<1000	<1000
Aliphatics >C12-C16	<1000 µg/kg	TM414		1700	6580	8150	4050	3940	2350
Aliphatics >C16-C21	<1000 µg/kg	TM414		11300	27600	38300	25700	25700	12100
Aliphatics >C21-C35	<1000 µg/kg	TM414		22700	47300	47400	48000	55700	25700
Aliphatics >C35-C44	<1000 µg/kg	TM414		5400	12900	16900	9350	12100	5210
Total Aliphatics >C10-C44	<5000 µg/kg	TM414		41300	95800	112000	87400	97700	45700
Total Aliphatics & Aromatics >C10-C44	<10000 µg/kg	TM414		209000	441000	670000	348000	420000	261000
Aromatics >EC5-EC7	<10 µg/kg	TM089		<10 4 @	<10 4	<10 4 @	<10 4 @	<10 4 @	<10 4 @
Aromatics >EC7-EC8	<10 µg/kg	TM089		<10 4 @	<10 4	<10 4 @	<10 4 @	<10 4 @	<10 4 @
Aromatics >EC8-EC10	<10 µg/kg	TM089		<10 4 @	<10 4	29.2 4 @	14.4 4 @	11 4 @	14.4 4 @
Aromatics > EC10-EC12	<1000 µg/kg	TM414		4120	6280	20200	6240	7620	4790
Aromatics > EC12-EC16	<1000 µg/kg	TM414		5860	12500	16400	11400	10800	7980
Aromatics > EC16-EC21	<1000 µg/kg	TM414		39400	79200	119000	64400	74400	51800
Aromatics > EC21-EC35	<1000 µg/kg	TM414		102000	209000	354000	156000	205000	135000
Aromatics >EC35-EC44	<1000 µg/kg	TM414		16600	38200	48900	22900	24600	16100
Aromatics > EC40-EC44	<1000 µg/kg	TM414		1780	7300	8070	3340	2960	3000
Total Aromatics > EC10-EC44	<5000 µg/kg	TM414		168000	345000	559000	261000	322000	216000
Total Aliphatics & Aromatics >C5-C44	<10000 µg/kg	TM414		209000	441000	671000	348000	420000	262000
Total Aliphatics >C5-C10	<50 µg/kg	TM089		<50 4 @	<50 4	129 4 @	65.5 4 @	58.2 4 @	104 4 @
Total Aromatics >EC5-EC10	<50 µg/kg	TM089		<50 4 @	<50 4	<50 4 @	<50 4 @	<50 4 @	<50 4 @
GRO >C5-C10	<20 µg/kg	TM089		<20 4 @	<20 4	129 4 @	65.5 4 @	58.2 4 @	104 4 @

Validated

CERTIFICATE OF ANALYSIS

SDG:	201215-62	**Client Reference:**	P18-669	**Report Number:**	583598
Location:	Llanwern	**Order Number:**		**Superseded Report:**	583597

TPH CWG (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	2BN2-13	2BN2-14	2BN2-15	2BN2-16	2BN2-17	2BN2-18
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	14/12/2020	14/12/2020	14/12/2020	14/12/2020	14/12/2020	14/12/2020
			Sample Time	.	.	.	.	.	.
			Date Received	15/12/2020	15/12/2020	15/12/2020	15/12/2020	15/12/2020	15/12/2020
			SDG Ref	201215-62	201215-62	201215-62	201215-62	201215-62	201215-62
			Lab Sample No.(s)	23432875	23432880	23432885	23432889	23432897	23432910
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		13.2 4 @	34.6 4 @	34.5 4 @	13.1 4 @	58.7 4 @	38.5 4 @
Aliphatics >C5-C6	<10 µg/kg	TM089		<10 4 @	12.5 4 @	20.5 4 @	13.4 4 @	<10 4 @	24.2 4 @
Aliphatics >C6-C8	<10 µg/kg	TM089		<10 4 @	11.4 4 @	24.8 4 @	10.1 4 @	<10 4 @	22 4 @
Aliphatics >C8-C10	<10 µg/kg	TM089		<10 4 @	<10 4 @	19.4 4 @	<10 4 @	<10 4 @	15.4 4 @
Aliphatics >C10-C12	<1000 µg/kg	TM414		<1000	<1000	<1000	<1000	<1000	<1000
Aliphatics >C12-C16	<1000 µg/kg	TM414		4340	2620	3090	2600	5160	3180
Aliphatics >C16-C21	<1000 µg/kg	TM414		23500	18000	19700	16800	26700	20500
Aliphatics >C21-C35	<1000 µg/kg	TM414		41800	30900	36400	31000	48300	33800
Aliphatics >C35-C44	<1000 µg/kg	TM414		10300	7450	9280	7030	11500	7890
Total Aliphatics >C10-C44	<5000 µg/kg	TM414		80300	59700	68900	57700	92600	65700
Total Aliphatics & Aromatics >C10-C44	<10000 µg/kg	TM414		365000	193000	236000	336000	365000	380000
Aromatics >EC5-EC7	<10 µg/kg	TM089		<10 4 @	<10 4 @	<10 4 @	<10 4 @	<10 4 @	<10 4 @
Aromatics >EC7-EC8	<10 µg/kg	TM089		<10 4 @	<10 4 @	<10 4 @	<10 4 @	<10 4 @	<10 4 @
Aromatics >EC8-EC10	<10 µg/kg	TM089		<10 4 @	<10 4 @	12.9 4 @	<10 4 @	<10 4 @	11 4 @
Aromatics > EC10-EC12	<1000 µg/kg	TM414		5530	2820	4760	4580	8610	5770
Aromatics > EC12-EC16	<1000 µg/kg	TM414		9940	6280	6060	7750	12400	11700
Aromatics > EC16-EC21	<1000 µg/kg	TM414		64900	33800	36100	56500	59100	87900
Aromatics > EC21-EC35	<1000 µg/kg	TM414		182000	80300	107000	182000	163000	188000
Aromatics >EC35-EC44	<1000 µg/kg	TM414		22600	9750	12800	26800	28900	21000
Aromatics > EC40-EC44	<1000 µg/kg	TM414		4090	1840	1760	4490	5660	2940
Total Aromatics > EC10-EC44	<5000 µg/kg	TM414		285000	133000	167000	278000	272000	314000
Total Aliphatics & Aromatics >C5-C44	<10000 µg/kg	TM414		365000	193000	236000	336000	365000	380000
Total Aliphatics >C5-C10	<50 µg/kg	TM089		<50 4 @	<50 4 @	64.7 4 @	<50 4 @	<50 4 @	61.6 4 @
Total Aromatics >EC5-EC10	<50 µg/kg	TM089		<50 4 @	<50 4 @	<50 4 @	<50 4 @	<50 4 @	<50 4 @
GRO >C5-C10	<20 µg/kg	TM089		<20 4 @	<20 4 @	64.7 4 @	<20 4 @	<20 4 @	61.6 4 @

Validated

CERTIFICATE OF ANALYSIS

SDG: 201215-62 **Client Reference:** P18-669 **Report Number:** 583598
Location: Llanwern **Order Number:** **Superseded Report:** 583597

TPH CWG (S)

Results Legend	
#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	2BN2-19	2BN2-20	2BN2-21	2BN2-22	2BN2-23	2BN2-24
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	14/12/2020	14/12/2020	14/12/2020	14/12/2020	14/12/2020	14/12/2020
			Sample Time	.	.	.	.	.	.
			Date Received	15/12/2020	15/12/2020	15/12/2020	15/12/2020	15/12/2020	15/12/2020
			SDG Ref	201215-62	201215-62	201215-62	201215-62	201215-62	201215-62
			Lab Sample No.(s)	23432918	23432941	23432949	23432955	23432959	23432963
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		32.7 4 @	19.2 4 @	40.5 4	23.1 4 @	28.5 4	17.1 4 @
Aliphatics >C5-C6	<10 µg/kg	TM089		10.5 4 @	21.1 4 @	20.7 4	12.9 4 @	16.2 4	17.6 4 @
Aliphatics >C6-C8	<10 µg/kg	TM089		13.7 4 @	25.5 4 @	29.5 4	11.8 4 @	18.4 4	19.8 4 @
Aliphatics >C8-C10	<10 µg/kg	TM089		<10 4 @	31.1 4 @	24 4	10.7 4 @	15.1 4	16.5 4 @
Aliphatics >C10-C12	<1000 µg/kg	TM414		1120	<1000	<1000	<1000	<1000	<1000
Aliphatics >C12-C16	<1000 µg/kg	TM414		4850	5950	7410	5060	5040	3090
Aliphatics >C16-C21	<1000 µg/kg	TM414		24000	29400	46700	33000	28300	20300
Aliphatics >C21-C35	<1000 µg/kg	TM414		40100	41100	49400	54000	42800	52700
Aliphatics >C35-C44	<1000 µg/kg	TM414		14900	14200	14600	9930	9960	11000
Total Aliphatics >C10-C44	<5000 µg/kg	TM414		85000	91400	119000	102000	86800	87300
Total Aliphatics & Aromatics >C10-C44	<10000 µg/kg	TM414		760000	566000	522000	440000	316000	1250000
Aromatics >EC5-EC7	<10 µg/kg	TM089		<10 4 @	<10 4 @	<10 4	<10 4 @	<10 4	<10 4 @
Aromatics >EC7-EC8	<10 µg/kg	TM089		<10 4 @	<10 4 @	<10 4	<10 4 @	<10 4	<10 4 @
Aromatics >EC8-EC10	<10 µg/kg	TM089		<10 4 @	21.1 4 @	15.3 4	<10 4 @	<10 4	11 4 @
Aromatics > EC10-EC12	<1000 µg/kg	TM414		5660	20700	19000	7980	6160	10600
Aromatics > EC12-EC16	<1000 µg/kg	TM414		30400	13800	14100	13300	9610	62900
Aromatics > EC16-EC21	<1000 µg/kg	TM414		243000	122000	88800	75700	51100	415000
Aromatics > EC21-EC35	<1000 µg/kg	TM414		352000	280000	248000	213000	141000	562000
Aromatics >EC35-EC44	<1000 µg/kg	TM414		45100	38300	32700	27700	20900	107000
Aromatics > EC40-EC44	<1000 µg/kg	TM414		8280	6170	4700	5000	4140	12600
Total Aromatics > EC10-EC44	<5000 µg/kg	TM414		676000	475000	403000	338000	229000	1160000
Total Aliphatics & Aromatics >C5-C44	<10000 µg/kg	TM414		761000	566000	522000	440000	316000	1250000
Total Aliphatics >C5-C10	<50 µg/kg	TM089		<50 4 @	77.7 4 @	74.2 4	<50 4 @	<50 4	53.9 4 @
Total Aromatics >EC5-EC10	<50 µg/kg	TM089		<50 4 @	<50 4 @	<50 4	<50 4 @	<50 4	<50 4 @
GRO >C5-C10	<20 µg/kg	TM089		<20 4 @	77.7 4 @	74.2 4	<20 4 @	<20 4	53.9 4 @

Validated

CERTIFICATE OF ANALYSIS

SDG: 201215-62 **Client Reference:** P18-669 **Report Number:** 583598
Location: Llanwern **Order Number:** **Superseded Report:** 583597

TPH CWG (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	2BN2-25	2BN2-26	2BN2-27	2BN2-28	2BSE-15	2BSE-16
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	14/12/2020	14/12/2020	14/12/2020	14/12/2020	11/12/2020	11/12/2020
			Sample Time	.	.	.	.	.	.
			Date Received	15/12/2020	15/12/2020	15/12/2020	15/12/2020	15/12/2020	15/12/2020
			SDG Ref	201215-62	201215-62	201215-62	201215-62	201215-62	201215-62
			Lab Sample No.(s)	23432967	23432973	23432977	23432981	23432722	23432786
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		28.5 4	42.7 4 @	17.7 4 @	32.5 4 @	51.1 4 @	29.9 4 @
Aliphatics >C5-C6	<10 µg/kg	TM089		14.1 4	24.4 4 @	<10 4 @	14.8 4 @	17.3 4 @	19.5 4 @
Aliphatics >C6-C8	<10 µg/kg	TM089		15.2 4	34.8 4 @	<10 4 @	13.7 4 @	67.1 4 @	32.9 4 @
Aliphatics >C8-C10	<10 µg/kg	TM089		13.1 4	34.8 4 @	<10 4 @	11.4 4 @	83.4 4 @	24.4 4 @
Aliphatics >C10-C12	<1000 µg/kg	TM414		<1000	<1000	<1000	<1000	1050	<1000
Aliphatics >C12-C16	<1000 µg/kg	TM414		5070	2090	4060	3410	6300	2440
Aliphatics >C16-C21	<1000 µg/kg	TM414		28400	14100	22800	17700	27700	8380
Aliphatics >C21-C35	<1000 µg/kg	TM414		58400	39500	46900	49800	45200	21700
Aliphatics >C35-C44	<1000 µg/kg	TM414		16500	7290	13900	17100	32100	7520
Total Aliphatics >C10-C44	<5000 µg/kg	TM414		109000	63200	88400	88500	112000	40700
Total Aliphatics & Aromatics >C10-C44	<10000 µg/kg	TM414		376000	289000	384000	291000	234000	186000
Aromatics >EC5-EC7	<10 µg/kg	TM089		<10 4	<10 4 @	<10 4 @	<10 4 @	13 4 @	<10 4 @
Aromatics >EC7-EC8	<10 µg/kg	TM089		<10 4	<10 4 @	<10 4 @	<10 4 @	21.7 4 @	<10 4 @
Aromatics >EC8-EC10	<10 µg/kg	TM089		<10 4	23.2 4 @	<10 4 @	<10 4 @	55.2 4 @	15.9 4 @
Aromatics > EC10-EC12	<1000 µg/kg	TM414		8210	5180	6700	5090	3810	2720
Aromatics > EC12-EC16	<1000 µg/kg	TM414		10400	7980	9340	6980	8140	5770
Aromatics > EC16-EC21	<1000 µg/kg	TM414		60400	50500	69900	44100	30000	41600
Aromatics > EC21-EC35	<1000 µg/kg	TM414		167000	145000	186000	130000	70800	84900
Aromatics >EC35-EC44	<1000 µg/kg	TM414		21400	17400	23400	16800	8460	10700
Aromatics > EC40-EC44	<1000 µg/kg	TM414		3340	3160	3480	1820	2940	1350
Total Aromatics > EC10-EC44	<5000 µg/kg	TM414		267000	226000	295000	202000	121000	146000
Total Aliphatics & Aromatics >C5-C44	<10000 µg/kg	TM414		376000	290000	384000	291000	234000	186000
Total Aliphatics >C5-C10	<50 µg/kg	TM089		<50 4	94 4 @	<50 4 @	<50 4 @	168 4 @	76.9 4 @
Total Aromatics >EC5-EC10	<50 µg/kg	TM089		<50 4	<50 4 @	<50 4 @	<50 4 @	89.9 4 @	<50 4 @
GRO >C5-C10	<20 µg/kg	TM089		<20 4	94 4 @	<20 4 @	<20 4 @	258 4 @	76.9 4 @

Validated

CERTIFICATE OF ANALYSIS

SDG: 201215-62 **Client Reference:** P18-669 **Report Number:** 583598
Location: Llanwern **Order Number:** **Superseded Report:** 583597

TPH CWG (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	2BSE-17	2BSE-18	2BSE-19	2BSE-20	2BSE-21	2BSE-36
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	11/12/2020	11/12/2020	11/12/2020	11/12/2020	11/12/2020	11/12/2020
			Sample Time	.	.	.	.	.	.
			Date Received	15/12/2020	15/12/2020	15/12/2020	15/12/2020	15/12/2020	15/12/2020
			SDG Ref	201215-62	201215-62	201215-62	201215-62	201215-62	201215-62
			Lab Sample No.(s)	23432853	23432930	23432986	23432990	23432994	23433001
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		88.5 @	25.5 4 @	61.1 4 @	29.8 4 @	16.3 4 @	29.3 4 @
Aliphatics >C5-C6	<10 µg/kg	TM089		12 @	26.5 4 @	<10 4 @	<10 4 @	<10 4 @	<10 4 @
Aliphatics >C6-C8	<10 µg/kg	TM089		14.2 @	39.1 4 @	<10 4 @	<10 4 @	<10 4 @	10.4 4 @
Aliphatics >C8-C10	<10 µg/kg	TM089		17.5 @	31.1 4 @	<10 4 @	<10 4 @	<10 4 @	<10 4 @
Aliphatics >C10-C12	<1000 µg/kg	TM414		<1000	<5000	<1000	<1000	<1000	2190
Aliphatics >C12-C16	<1000 µg/kg	TM414		1170	<5000	<1000	3350	4110	8250
Aliphatics >C16-C21	<1000 µg/kg	TM414		9860	18100	<1000	19600	16400	30300
Aliphatics >C21-C35	<1000 µg/kg	TM414		25800	21400	1310	37800	44700	54100
Aliphatics >C35-C44	<1000 µg/kg	TM414		2950	<5000	<1000	8960	11400	27200
Total Aliphatics >C10-C44	<5000 µg/kg	TM414		39900	40600	<5000	69900	77300	122000
Total Aliphatics & Aromatics >C10-C44	<10000 µg/kg	TM414		128000	136000	24600	177000	262000	285000
Aromatics >EC5-EC7	<10 µg/kg	TM089		<10 @	10.4 4 @	<10 4 @	<10 4 @	<10 4 @	<10 4 @
Aromatics >EC7-EC8	<10 µg/kg	TM089		<10 @	11.5 4 @	<10 4 @	<10 4 @	<10 4 @	<10 4 @
Aromatics >EC8-EC10	<10 µg/kg	TM089		12 @	20.7 4 @	<10 4 @	<10 4 @	<10 4 @	<10 4 @
Aromatics > EC10-EC12	<1000 µg/kg	TM414		7750	<5000	<1000	1880	4140	5130
Aromatics > EC12-EC16	<1000 µg/kg	TM414		3160	<5000	<1000	4170	9680	9850
Aromatics > EC16-EC21	<1000 µg/kg	TM414		21300	29400	5510	21600	50500	42700
Aromatics > EC21-EC35	<1000 µg/kg	TM414		48900	52500	14600	73000	108000	98300
Aromatics >EC35-EC44	<1000 µg/kg	TM414		6710	<5000	1400	6120	12300	7130
Aromatics > EC40-EC44	<1000 µg/kg	TM414		1110	<5000	<1000	1690	1570	1710
Total Aromatics > EC10-EC44	<5000 µg/kg	TM414		87900	95800	22700	107000	185000	163000
Total Aliphatics & Aromatics >C5-C44	<10000 µg/kg	TM414		128000	136000	22700	177000	262000	285000
Total Aliphatics >C5-C10	<50 µg/kg	TM089		<50 @	96.6 4 @	<50 4 @	<50 4 @	<50 4 @	<50 4 @
Total Aromatics >EC5-EC10	<50 µg/kg	TM089		<50 @	<50 4 @	<50 4 @	<50 4 @	<50 4 @	<50 4 @
GRO >C5-C10	<20 µg/kg	TM089		<20 @	96.6 4 @	<20 4 @	<20 4 @	<20 4 @	<20 4 @

Validated

CERTIFICATE OF ANALYSIS

SDG: 201215-62 **Client Reference:** P18-669 **Report Number:** 583598
Location: Llanwern **Order Number:** **Superseded Report:** 583597

TPH CWG (S)

Results Legend	
#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	2BSE-37	2BSE-38	2BSE-39	2BSE-40	2BSE-41	2BSE-42
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	11/12/2020	11/12/2020	11/12/2020	11/12/2020	11/12/2020	11/12/2020
			Sample Time	.	.	.	.	.	.
			Date Received	15/12/2020	15/12/2020	15/12/2020	15/12/2020	15/12/2020	15/12/2020
			SDG Ref	201215-62	201215-62	201215-62	201215-62	201215-62	201215-62
			Lab Sample No.(s)	23433006	23432728	23432735	23432740	23432745	23432753
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		35.3 4 @	75.9 @	27.3 4 @	78.5 @	26.6 4 @	30.4 4
Aliphatics >C5-C6	<10 µg/kg	TM089		16.3 4 @	<10 @	27.2 4 @	<10 @	<10 4 @	14.8 4
Aliphatics >C6-C8	<10 µg/kg	TM089		24 4 @	<10 @	29.3 4 @	<10 @	14.6 4 @	16.9 4
Aliphatics >C8-C10	<10 µg/kg	TM089		12 4 @	<10 @	25 4 @	<10 @	15.6 4 @	13.7 4
Aliphatics >C10-C12	<1000 µg/kg	TM414		<1000	<1000	2720	<1000	<1000	<1000
Aliphatics >C12-C16	<1000 µg/kg	TM414		3760	5210	9830	<1000	1230	2860
Aliphatics >C16-C21	<1000 µg/kg	TM414		15800	48200	44300	1300	7880	13900
Aliphatics >C21-C35	<1000 µg/kg	TM414		32700	132000	67200	2950	13200	27800
Aliphatics >C35-C44	<1000 µg/kg	TM414		13300	30900	21300	2760	2450	5370
Total Aliphatics >C10-C44	<5000 µg/kg	TM414		66300	217000	145000	7270	24900	50300
Total Aliphatics & Aromatics >C10-C44	<10000 µg/kg	TM414		233000	565000	374000	79000	82200	176000
Aromatics >EC5-EC7	<10 µg/kg	TM089		<10 4 @	<10 @	<10 4 @	<10 @	<10 4 @	<10 4
Aromatics >EC7-EC8	<10 µg/kg	TM089		<10 4 @	<10 @	<10 4 @	<10 @	<10 4 @	<10 4
Aromatics >EC8-EC10	<10 µg/kg	TM089		<10 4 @	<10 @	16.3 4 @	<10 @	10.4 4 @	<10 4
Aromatics > EC10-EC12	<1000 µg/kg	TM414		3780	16400	7970	<1000	1180	4310
Aromatics > EC12-EC16	<1000 µg/kg	TM414		8880	12800	12900	2030	2410	5000
Aromatics > EC16-EC21	<1000 µg/kg	TM414		53100	82600	59300	12600	14300	32000
Aromatics > EC21-EC35	<1000 µg/kg	TM414		93100	211000	135000	49300	36900	74000
Aromatics >EC35-EC44	<1000 µg/kg	TM414		7760	25200	13500	6920	2470	10000
Aromatics > EC40-EC44	<1000 µg/kg	TM414		1790	3860	1910	1510	<1000	1310
Total Aromatics > EC10-EC44	<5000 µg/kg	TM414		167000	348000	228000	71800	57300	125000
Total Aliphatics & Aromatics >C5-C44	<10000 µg/kg	TM414		233000	565000	374000	79000	82200	176000
Total Aliphatics >C5-C10	<50 µg/kg	TM089		52.3 4 @	<50 @	81.5 4 @	<50 @	<50 4 @	<50 4
Total Aromatics >EC5-EC10	<50 µg/kg	TM089		<50 4 @	<50 @	<50 4 @	<50 @	<50 4 @	<50 4
GRO >C5-C10	<20 µg/kg	TM089		52.3 4 @	<20 @	81.5 4 @	<20 @	<20 4 @	<20 4

Validated

CERTIFICATE OF ANALYSIS

SDG:	201215-62	**Client Reference:**	P18-669	**Report Number:**	583598
Location:	Llanwern	**Order Number:**		**Superseded Report:**	583597

VOC MS (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	2BN-1	2BN-2	2BN-3	2BN-4	2BN-5	2BN-6
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	14/12/2020	14/12/2020	14/12/2020	14/12/2020	14/12/2020	14/12/2020
			Sample Time	.	.	.	.	.	.
			Date Received	15/12/2020	15/12/2020	15/12/2020	15/12/2020	15/12/2020	15/12/2020
			SDG Ref	201215-62	201215-62	201215-62	201215-62	201215-62	201215-62
			Lab Sample No.(s)	23432757	23432763	23432768	23432776	23432780	23432790
			AGS Reference						
Dibromofluoromethane**	%	TM116		103 @	95.7 @	95.9 @	108 @	116 @	101 @
Toluene-d8**	%	TM116		93.2 @	90.2 @	92.3 @	94.7 @	97.7 @	91 @
4-Bromofluorobenzene**	%	TM116		86.1 @	78.1 @	83.6 @	87.1 @	98.2 @	76.3 @
Methyl Tertiary Butyl Ether	<10 µg/kg	TM116		<200 @ M	<200 @ M	<200 @ M	<200 @ M	<200 @ M	<200 @ M
Benzene	<9 µg/kg	TM116		<180 @ M	<180 @ M	<180 @ M	<180 @ M	<180 @ M	<180 @ M
Toluene	<7 µg/kg	TM116		<140 @ M	<140 @ M	<140 @ M	<140 @ M	<140 @ M	<140 @ M
Ethylbenzene	<4 µg/kg	TM116		<80 @ M	<80 @ M	<80 @ M	<80 @ M	<80 @ M	<80 @ M
p/m-Xylene	<10 µg/kg	TM116		<200 @ #	<200 @ #	<200 @ #	<200 @ #	<200 @ #	<200 @ #
o-Xylene	<10 µg/kg	TM116		<200 @ M	<200 @ M	<200 @ M	<200 @ M	<200 @ M	<200 @ M
Naphthalene	<13 µg/kg	TM116		<2600 M	835 M	623 M	612 M	<2600 M	<2600 M
Sum of Detected Xylenes	<0.02 mg/kg	TM116		<0.4 @	<0.4 @	<0.4 @	<0.4 @	<0.4 @	<0.4 @
Sum of BTEX	<40 µg/kg	TM116		<800 @	<800 @	<800 @	<800 @	<800 @	<800 @

Validated

CERTIFICATE OF ANALYSIS

SDG:	201215-62	**Client Reference:**	P18-669	**Report Number:**	583598
Location:	Llanwern	**Order Number:**		**Superseded Report:**	583597

VOC MS (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	2BN-7	2BN-8	2BN-9	2BN-10	2BN2-1	2BN2-2
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	14/12/2020	14/12/2020	14/12/2020	14/12/2020	14/12/2020	14/12/2020
			Sample Time	.	.	.	.	.	.
			Date Received	15/12/2020	15/12/2020	15/12/2020	15/12/2020	15/12/2020	15/12/2020
			SDG Ref	201215-62	201215-62	201215-62	201215-62	201215-62	201215-62
			Lab Sample No.(s)	23432795	23432801	23432805	23432810	23432817	23432823
			AGS Reference						
Dibromofluoromethane**	%	TM116		103 @	97.3 @	83.5 @	97.3 @	98.5 @	105 @
Toluene-d8**	%	TM116		92.2 @	88.6 @	87.1 @	97.3 @	95.2 @	91.9 @
4-Bromofluorobenzene**	%	TM116		78.9 @	72.3 @	69.8 @	80.8 @	78.4 @	81.8 @
Methyl Tertiary Butyl Ether	<10 µg/kg	TM116		<200 @ M	<200 @ M	<200 @ M	<200 @ M	<200 @ M	<200 @ M
Benzene	<9 µg/kg	TM116		<180 @ M	<180 @ M	<180 @ M	<180 @ M	<180 @ M	<180 @ M
Toluene	<7 µg/kg	TM116		<140 @ M	<140 @ M	<140 @ M	<140 @ M	<140 @ M	<140 @ M
Ethylbenzene	<4 µg/kg	TM116		<80 @ M	<80 @ M	<80 @ M	<80 @ M	<80 @ M	<80 @ M
p/m-Xylene	<10 µg/kg	TM116		<200 @ #	<200 @ #	<200 @ #	<200 @ #	<200 @ #	<200 @ #
o-Xylene	<10 µg/kg	TM116		<200 @ M	<200 @ M	<200 @ M	<200 @ M	<200 @ M	<200 @ M
Naphthalene	<13 µg/kg	TM116		764 M	708 M	<2600 M	316 M	<2600 M	959 M
Sum of Detected Xylenes	<0.02 mg/kg	TM116		<0.4 @	<0.4 @	<0.4 @	<0.4 @	<0.4 @	<0.4 @
Sum of BTEX	<40 µg/kg	TM116		<800 @	<800 @	<800 @	<800 @	<800 @	<800 @

Validated

CERTIFICATE OF ANALYSIS

SDG:	201215-62	**Client Reference:**	P18-669	**Report Number:**	583598
Location:	Llanwern	**Order Number:**		**Superseded Report:**	583597

VOC MS (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	2BN2-3	2BN2-4	2BN2-5	2BN2-6	2BN2-7	2BN2-12
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	14/12/2020	14/12/2020	14/12/2020	14/12/2020	14/12/2020	14/12/2020
			Sample Time	.	.	.	.	.	.
			Date Received	15/12/2020	15/12/2020	15/12/2020	15/12/2020	15/12/2020	15/12/2020
			SDG Ref	201215-62	201215-62	201215-62	201215-62	201215-62	201215-62
			Lab Sample No.(s)	23432829	23432837	23432845	23432860	23432866	23432871
			AGS Reference						
Dibromofluoromethane**	%	TM116		104 @	98.3 @	98.8 @	103 @	106 @	103 @
Toluene-d8**	%	TM116		92.6 @	93.8 @	94.4 @	94.3 @	96.1 @	94.6 @
4-Bromofluorobenzene**	%	TM116		82.8 @	79.8 @	76.9 @	85 @	84.8 @	85.1 @
Methyl Tertiary Butyl Ether	<10 µg/kg	TM116		<200 @ M	<200 @ M	<200 @ M	<200 @ M	<200 @ M	<200 @ M
Benzene	<9 µg/kg	TM116		<180 @ M	<180 @ M	<180 @ M	<180 @ M	<180 @ M	<180 @ M
Toluene	<7 µg/kg	TM116		<140 @ M	<140 @ M	<140 @ M	<140 @ M	<140 @ M	<140 @ M
Ethylbenzene	<4 µg/kg	TM116		<80 @ M	<80 @ M	<80 @ M	<80 @ M	<80 @ M	<80 @ M
p/m-Xylene	<10 µg/kg	TM116		<200 @ #	<200 @ #	<200 @ #	<200 @ #	<200 @ #	<200 @ #
o-Xylene	<10 µg/kg	TM116		<200 @ M	<200 @ M	<200 @ M	<200 @ M	<200 @ M	<200 @ M
Naphthalene	<13 µg/kg	TM116		841 M	<2600 M	2800 M	1170 M	<2600 M	4710 M
Sum of Detected Xylenes	<0.02 mg/kg	TM116		<0.4 @	<0.4 @	<0.4 @	<0.4 @	<0.4 @	<0.4 @
Sum of BTEX	<40 µg/kg	TM116		<800 @	<800 @	<800 @	<800 @	<800 @	<800 @

Validated

CERTIFICATE OF ANALYSIS

SDG:	201215-62	**Client Reference:**	P18-669	**Report Number:**	583598
Location:	Llanwern	**Order Number:**		**Superseded Report:**	583597

VOC MS (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	2BN2-13	2BN2-14	2BN2-15	2BN2-16	2BN2-17	2BN2-18
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	14/12/2020	14/12/2020	14/12/2020	14/12/2020	14/12/2020	14/12/2020
			Sample Time	.	.	.	.	.	.
			Date Received	15/12/2020	15/12/2020	15/12/2020	15/12/2020	15/12/2020	15/12/2020
			SDG Ref	201215-62	201215-62	201215-62	201215-62	201215-62	201215-62
			Lab Sample No.(s)	23432875	23432880	23432885	23432889	23432897	23432910
			AGS Reference						
Dibromofluoromethane**	%	TM116		94.5 @	106 @	95.4 @	96.8 @	118 @	99.2 @
Toluene-d8**	%	TM116		94.9 @	94.1 @	91.3 @	94.8 @	89.6 @	93.3 @
4-Bromofluorobenzene**	%	TM116		83.8 @	87.6 @	84.7 @	80.9 @	93.6 @	79.4 @
Methyl Tertiary Butyl Ether	<10 µg/kg	TM116		<200 @ M	<200 @ M	<200 @ M	<200 @ M	<200 @ M	<200 @ M
Benzene	<9 µg/kg	TM116		<180 @ M	<180 @ M	<180 @ M	<180 @ M	<180 @ M	<180 @ M
Toluene	<7 µg/kg	TM116		<140 @ M	<140 @ M	<140 @ M	<140 @ M	<140 @ M	<140 @ M
Ethylbenzene	<4 µg/kg	TM116		<80 @ M	<80 @ M	<80 @ M	<80 @ M	<80 @ M	<80 @ M
p/m-Xylene	<10 µg/kg	TM116		<200 @ #	<200 @ #	<200 @ #	<200 @ #	<200 @ #	<200 @ #
o-Xylene	<10 µg/kg	TM116		<200 @ M	<200 @ M	<200 @ M	<200 @ M	<200 @ M	<200 @ M
Naphthalene	<13 µg/kg	TM116		3520 M	538 M	810 M	3420 M	1140 M	5390 M
Sum of Detected Xylenes	<0.02 mg/kg	TM116		<0.4 @	<0.4 @	<0.4 @	<0.4 @	<0.4 @	<0.4 @
Sum of BTEX	<40 µg/kg	TM116		<800 @	<800 @	<800 @	<800 @	<800 @	<800 @

Validated

CERTIFICATE OF ANALYSIS

SDG:	201215-62	**Client Reference:**	P18-669	**Report Number:**	583598
Location:	Llanwern	**Order Number:**		**Superseded Report:**	583597

VOC MS (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	2BN2-19	2BN2-20	2BN2-21	2BN2-22	2BN2-23	2BN2-24
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	14/12/2020	14/12/2020	14/12/2020	14/12/2020	14/12/2020	14/12/2020
			Sample Time	.	.	.	.	.	.
			Date Received	15/12/2020	15/12/2020	15/12/2020	15/12/2020	15/12/2020	15/12/2020
			SDG Ref	201215-62	201215-62	201215-62	201215-62	201215-62	201215-62
			Lab Sample No.(s)	23432918	23432941	23432949	23432955	23432959	23432963
			AGS Reference						
Dibromofluoromethane**	%	TM116		98.1 @	98.5 @	94 @	96.9 @	94.9 @	96.5 @
Toluene-d8**	%	TM116		93.5 @	94.2 @	94.4 @	95.7 @	97.4 @	95 @
4-Bromofluorobenzene**	%	TM116		80 @	82.1 @	79.9 @	85.6 @	76.4 @	83.4 @
Methyl Tertiary Butyl Ether	<10 µg/kg	TM116		<200 @ M	<200 @ M	<200 @ M	<200 @ M	<200 @ M	<200 @ M
Benzene	<9 µg/kg	TM116		<180 @ M	<180 @ M	<180 @ M	<180 @ M	<180 @ M	<180 @ M
Toluene	<7 µg/kg	TM116		<140 @ M	<140 @ M	<140 @ M	<140 @ M	<140 @ M	<140 @ M
Ethylbenzene	<4 µg/kg	TM116		<80 @ M	<80 @ M	<80 @ M	<80 @ M	<80 @ M	<80 @ M
p/m-Xylene	<10 µg/kg	TM116		<200 @ #	<200 @ #	<200 @ #	<200 @ #	<200 @ #	<200 @ #
o-Xylene	<10 µg/kg	TM116		<200 @ M	<200 @ M	<200 @ M	<200 @ M	<200 @ M	<200 @ M
Naphthalene	<13 µg/kg	TM116		598 M	8040 M	2120 M	6570 M	5320 M	1210 M
Sum of Detected Xylenes	<0.02 mg/kg	TM116		<0.4 @	<0.4 @	<0.4 @	<0.4 @	<0.4 @	<0.4 @
Sum of BTEX	<40 µg/kg	TM116		<800 @	<800 @	<800 @	<800 @	<800 @	<800 @

Validated

CERTIFICATE OF ANALYSIS

SDG:	201215-62	**Client Reference:**	P18-669	**Report Number:**	583598
Location:	Llanwern	**Order Number:**		**Superseded Report:**	583597

VOC MS (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	2BN2-25	2BN2-26	2BN2-27	2BN2-28	2BSE-15	2BSE-16
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	14/12/2020	14/12/2020	14/12/2020	14/12/2020	11/12/2020	11/12/2020
			Sample Time	.	.	.	.	.	.
			Date Received	15/12/2020	15/12/2020	15/12/2020	15/12/2020	15/12/2020	15/12/2020
			SDG Ref	201215-62	201215-62	201215-62	201215-62	201215-62	201215-62
			Lab Sample No.(s)	23432967	23432973	23432977	23432981	23432722	23432786
			AGS Reference						
Dibromofluoromethane**	%	TM116		95.5 @	116 @	97.7 @	102 @	104 @	97.3 @
Toluene-d8**	%	TM116		91.5 @	89.9 @	95 @	91.7 @	97 @	91.1 @
4-Bromofluorobenzene**	%	TM116		74.1 @	82.9 @	85.6 @	81.3 @	86.7 @	77.5 @
Methyl Tertiary Butyl Ether	<10 µg/kg	TM116		<200 @ M	<200 @ M	<200 @ M	<200 @ M	<200 @ M	<200 @ M
Benzene	<9 µg/kg	TM116		<180 @ M	<180 @ M	<180 @ M	<180 @ M	<180 @ M	<180 @ M
Toluene	<7 µg/kg	TM116		<140 @ M	<140 @ M	<140 @ M	<140 @ M	<140 @ M	<140 @ M
Ethylbenzene	<4 µg/kg	TM116		<80 @ M	<80 @ M	<80 @ M	<80 @ M	<80 @ M	<80 @ M
p/m-Xylene	<10 µg/kg	TM116		<200 @ #	<200 @ #	<200 @ #	<200 @ #	<200 @ #	<200 @ #
o-Xylene	<10 µg/kg	TM116		<200 @ M	<200 @ M	<200 @ M	<200 @ M	<200 @ M	<200 @ M
Naphthalene	<13 µg/kg	TM116		703 M	897 M	757 M	571 M	<260 M	<2600 M
Sum of Detected Xylenes	<0.02 mg/kg	TM116		<0.4 @	<0.4 @	<0.4 @	<0.4 @	<0.4 @	<0.4 @
Sum of BTEX	<40 µg/kg	TM116		<800 @	<800 @	<800 @	<800 @	<800 @	<800 @

Validated

CERTIFICATE OF ANALYSIS

SDG:	201215-62	**Client Reference:**	P18-669	**Report Number:**	583598
Location:	Llanwern	**Order Number:**		**Superseded Report:**	583597

VOC MS (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	2BSE-17	2BSE-18	2BSE-19	2BSE-20	2BSE-21	2BSE-36
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	11/12/2020	11/12/2020	11/12/2020	11/12/2020	11/12/2020	11/12/2020
			Sample Time	.	.	.	.	.	.
			Date Received	15/12/2020	15/12/2020	15/12/2020	15/12/2020	15/12/2020	15/12/2020
			SDG Ref	201215-62	201215-62	201215-62	201215-62	201215-62	201215-62
			Lab Sample No.(s)	23432853	23432930	23432986	23432990	23432994	23433001
			AGS Reference						
Dibromofluoromethane**	%	TM116		108 @	97.7 @	109 @	97.6 @	93.3 @	98.8 @
Toluene-d8**	%	TM116		97.6 @	91.5 @	96.1 @	94.9 @	91.9 @	93.4 @
4-Bromofluorobenzene**	%	TM116		92.4 @	77 @	89.1 @	84.1 @	78.4 @	80.5 @
Methyl Tertiary Butyl Ether	<10 µg/kg	TM116		<200 @ M	<200 @ M	<200 @ M	<200 @ M	<200 @ M	<200 @ M
Benzene	<9 µg/kg	TM116		<180 @ M	<180 @ M	<180 @ M	<180 @ M	<180 @ M	<180 @ M
Toluene	<7 µg/kg	TM116		<140 @ M	<140 @ M	<140 @ M	<140 @ M	<140 @ M	<140 @ M
Ethylbenzene	<4 µg/kg	TM116		<80 @ M	<80 @ M	<80 @ M	<80 @ M	<80 @ M	<80 @ M
p/m-Xylene	<10 µg/kg	TM116		<200 @ #	<200 @ #	<200 @ #	<200 @ #	<200 @ #	<200 @ #
o-Xylene	<10 µg/kg	TM116		<200 @ M	<200 @ M	<200 @ M	<200 @ M	<200 @ M	<200 @ M
Naphthalene	<13 µg/kg	TM116		791 M	6860 M	<260 M	<2600 M	3130 M	407 M
Sum of Detected Xylenes	<0.02 mg/kg	TM116		<0.4 @	<0.4 @	<0.4 @	<0.4 @	<0.4 @	<0.4 @
Sum of BTEX	<40 µg/kg	TM116		<800 @	<800 @	<800 @	<800 @	<800 @	<800 @

Validated

CERTIFICATE OF ANALYSIS

SDG:	201215-62	**Client Reference:**	P18-669	**Report Number:**	583598
Location:	Llanwern	**Order Number:**		**Superseded Report:**	583597

VOC MS (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	2BSE-37	2BSE-38	2BSE-39	2BSE-40	2BSE-41	2BSE-42
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	11/12/2020	11/12/2020	11/12/2020	11/12/2020	11/12/2020	11/12/2020
			Sample Time	.	.	.	.	.	.
			Date Received	15/12/2020	15/12/2020	15/12/2020	15/12/2020	15/12/2020	15/12/2020
			SDG Ref	201215-62	201215-62	201215-62	201215-62	201215-62	201215-62
			Lab Sample No.(s)	23433006	23432728	23432735	23432740	23432745	23432753
			AGS Reference						
Dibromofluoromethane**	%	TM116		99.1 @	105 @	99.4 @	106 @	107 @	95 @
Toluene-d8**	%	TM116		94.6 @	99.3 @	93.8 @	96.8 @	96.5 @	91.8 @
4-Bromofluorobenzene**	%	TM116		77.9 @	91 @	82.7 @	90.1 @	87.4 @	78 @
Methyl Tertiary Butyl Ether	<10 µg/kg	TM116		<200 @ M	<200 @ M	<200 @ M	<200 @ M	<200 @ M	<200 @ M
Benzene	<9 µg/kg	TM116		<180 @ M	<180 @ M	<180 @ M	<180 @ M	<180 @ M	<180 @ M
Toluene	<7 µg/kg	TM116		<140 @ M	<140 @ M	<140 @ M	<140 @ M	<140 @ M	<140 @ M
Ethylbenzene	<4 µg/kg	TM116		<80 @ M	<80 @ M	<80 @ M	<80 @ M	<80 @ M	<80 @ M
p/m-Xylene	<10 µg/kg	TM116		<200 @ #	<200 @ #	<200 @ #	<200 @ #	<200 @ #	<200 @ #
o-Xylene	<10 µg/kg	TM116		<200 @ M	<200 @ M	<200 @ M	<200 @ M	<200 @ M	<200 @ M
Naphthalene	<13 µg/kg	TM116		<2600 M	831 M	<2600 M	295 M	<260 M	615 M
Sum of Detected Xylenes	<0.02 mg/kg	TM116		<0.4 @	<0.4 @	<0.4 @	<0.4 @	<0.4 @	<0.4 @
Sum of BTEX	<40 µg/kg	TM116		<800 @	<800 @	<800 @	<800 @	<800 @	<800 @

CERTIFICATE OF ANALYSIS

SDG:	201215-62	**Client Reference:**	P18-669	**Report Number:**	583598
Location:	Llanwern	**Order Number:**		**Superseded Report:**	583597

Asbestos Identification - Solid Samples

Results Legend

#	ISO17025 accredited.
M	*m*CERTS accredited.
*	Subcontracted test.
(F)	Trigger breach confirmed
1-5&♦§@	Sample deviation (see appendix)

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthophyllite	Fibrous Tremolite	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	2BN-1 0.00 - 0.00 SOLID 14/12/2020 00:00:00 15/12/2020 05:00:00 201215-62 23432757 TM048	22/12/2020	Marcin Magdziarek	Loose fibres in soil	Not Detected (#)	Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	2BN-3 0.00 - 0.00 SOLID 14/12/2020 00:00:00 15/12/2020 05:00:00 201215-62 23432768 TM048	22/12/2020	Agnieszka Chelmowska	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	2BN-5 0.00 - 0.00 SOLID 14/12/2020 00:00:00 15/12/2020 05:00:00 201215-62 23432780 TM048	21/12/20	Andrzej Ferfecki	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	2BN-7 0.00 - 0.00 SOLID 14/12/2020 00:00:00 15/12/2020 05:00:00 201215-62 23432795 TM048	21/12/20	Andrzej Ferfecki	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	2BN-9 0.00 - 0.00 SOLID 14/12/2020 00:00:00 15/12/2020 05:00:00 201215-62 23432805 TM048	22/12/2020	Agnieszka Chelmowska	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	2BN2-1 0.00 - 0.00 SOLID 14/12/2020 00:00:00 15/12/2020 05:00:00 201215-62 23432817 TM048	22/12/2020	Barbara Urbanek-Walsh	Loose fibres in soil.	Not Detected (#)	Trace (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	2BN2-3 0.00 - 0.00 SOLID 14/12/2020 00:00:00 15/12/2020 05:00:00 201215-62 23432829 TM048	22/12/2020	Barbara Urbanek-Walsh	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	2BN2-5 0.00 - 0.00 SOLID 14/12/2020 00:00:00 15/12/2020 05:00:00 201215-62 23432845 TM048	22/12/2020	Barbara Urbanek-Walsh	Loose fibres in soil.	Not Detected (#)	Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected

CERTIFICATE OF ANALYSIS

SDG:	201215-62	**Client Reference:**	P18-669	**Report Number:**	583598
Location:	Llanwern	**Order Number:**		**Superseded Report:**	583597

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthophyllite	Fibrous Tremolite	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	2BN2-7 0.00 - 0.00 SOLID 14/12/2020 00:00:00 15/12/2020 05:00:00 201215-62 23432866 TM048	22/12/2020	Agnieszka Chelmowska	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	2BN2-13 0.00 - 0.00 SOLID 14/12/2020 00:00:00 15/12/2020 05:00:00 201215-62 23432875 TM048	22/12/2020	Marcin Magdziarek	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	2BN2-15 0.00 - 0.00 SOLID 14/12/2020 00:00:00 15/12/2020 05:00:00 201215-62 23432885 TM048	22/12/2020	Marcin Magdziarek	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	2BN2-17 0.00 - 0.00 SOLID 14/12/2020 00:00:00 15/12/2020 05:00:00 201215-62 23432897 TM048	22/12/2020	Marcin Magdziarek	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	2BN2-19 0.00 - 0.00 SOLID 14/12/2020 00:00:00 15/12/2020 05:00:00 201215-62 23432918 TM048	22/12/2020	Barbara Urbanek-Walsh	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	2BN2-21 0.00 - 0.00 SOLID 14/12/2020 00:00:00 15/12/2020 05:00:00 201215-62 23432949 TM048	22/12/2020	Barbara Urbanek-Walsh	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	2BN2-23 0.00 - 0.00 SOLID 14/12/2020 00:00:00 15/12/2020 05:00:00 201215-62 23432959 TM048	22/12/20	Andrzej Ferfecki	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	2BN2-25 0.00 - 0.00 SOLID 14/12/2020 00:00:00 15/12/2020 05:00:00 201215-62 23432967 TM048	22/12/2020	Agnieszka Chelmowska	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	2BN2-27 0.00 - 0.00 SOLID 14/12/2020 00:00:00 15/12/2020 05:00:00 201215-62 23432977 TM048	22/12/2020	Agnieszka Chelmowska	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected

Validated

CERTIFICATE OF ANALYSIS

SDG:	201215-62	**Client Reference:**	P18-669	**Report Number:**	583598
Location:	Llanwern	**Order Number:**		**Superseded Report:**	583597

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthophyllite	Fibrous Tremolite	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	2BSE-15 0.00 - 0.00 SOLID 11/12/2020 00:00:00 15/12/2020 05:00:00 201215-62 23432722 TM048	22/12/20	Andrzej Ferfecki	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	2BSE-17 0.00 - 0.00 SOLID 11/12/2020 00:00:00 15/12/2020 05:00:00 201215-62 23432853 TM048	22/12/2020	Marcin Magdziarek	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	2BSE-19 0.00 - 0.00 SOLID 11/12/2020 00:00:00 15/12/2020 05:00:00 201215-62 23432986 TM048	22/12/2020	Barbara Urbanek-Walsh	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	2BSE-21 0.00 - 0.00 SOLID 11/12/2020 00:00:00 15/12/2020 05:00:00 201215-62 23432994 TM048	22/12/20	Andrzej Ferfecki	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	2BSE-37 0.00 - 0.00 SOLID 11/12/2020 00:00:00 15/12/2020 05:00:00 201215-62 23433006 TM048	22/12/2020	Marcin Magdziarek	Loose fibres in soil	Not Detected (#)	Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	2BSE-39 0.00 - 0.00 SOLID 11/12/2020 00:00:00 15/12/2020 05:00:00 201215-62 23432735 TM048	22/12/2020	Barbara Urbanek-Walsh	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	2BSE-41 0.00 - 0.00 SOLID 11/12/2020 00:00:00 15/12/2020 05:00:00 201215-62 23432745 TM048	22/12/2020	Agnieszka Chelmowska	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected

CERTIFICATE OF ANALYSIS

SDG:	201215-62	**Client Reference:**	P18-669	**Report Number:**	583598
Location:	Llanwern	**Order Number:**		**Superseded Report:**	583597

Table of Results - Appendix

Method No	Reference	Description
PM024	Modified BS 1377	Soil preparation including homogenisation, moisture screens of soils for Asbestos Containing Material
SUB		Subcontracted Test
TM024	Method 4500A & B, AWWA/APHA, 20th Ed., 1999	Determination of Exchangeable Ammonium and Ammoniacal Nitrogen as N by titration on solids
TM048	HSG 248, Asbestos: The analysts' guide for sampling, analysis and clearance procedures	Identification of Asbestos in Bulk Material
TM062 (S)	National Grid Property Holdings Methods for the Collection & Analysis of Samples from National Grid Sites version 1 Sec 3.9	Determination of Phenols in Soils by HPLC
TM089	Modified: US EPA Methods 8020 & 602	Determination of Gasoline Range Hydrocarbons (GRO) by Headspace GC-FID (C4-C12)
TM116	Modified: US EPA Method 8260, 8120, 8020, 624, 610 & 602	Determination of Volatile Organic Compounds by Headspace / GC-MS
TM132	In - house Method	ELTRA CS800 Operators Guide
TM133	BS 1377: Part 3 1990;BS 6068-2.5	Determination of pH in Soil and Water using the GLpH pH Meter
TM153	Method 4500A,B,C, I, M AWWA/APHA, 20th Ed., 1999	Determination of Total Cyanide, Free (Easily Liberatable) Cyanide and Thiocyanate using the Skalar SANS+ System Segmented Flow Analyser
TM181	US EPA Method 6010B	Determination of Routine Metals in Soil by iCap 6500 Duo ICP-OES
TM218	Shaker extraction - EPA method 3546.	The determination of PAH in soil samples by GC-MS
TM414	Analysis of Petroleum Hydrocarbons in Environmental Media – Total Petroleum Hydrocarbon Criteria	Determination of Speciated Extractable Petroleum Hydrocarbons in Soils by GCxGC-FID

NA = not applicable.

Chemical testing (unless subcontracted) performed at ALS Life Sciences Ltd Hawarden (Method codes TM) or ALS Life Sciences Ltd Aberdeen (Method codes S).

CERTIFICATE OF ANALYSIS

SDG:	201215-62	**Client Reference:**	P18-669	**Report Number:**	583598
Location:	Llanwern	**Order Number:**		**Superseded Report:**	583597

Test Completion Dates

Lab Sample No(s)	23432757	23432763	23432768	23432776	23432780	23432790	23432795	23432801	23432805	23432810
Customer Sample Ref.	2BN-1	2BN-2	2BN-3	2BN-4	2BN-5	2BN-6	2BN-7	2BN-8	2BN-9	2BN-10
AGS Ref.										
Depth	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
Ammonium Soil by Titration	22-Dec-2020	22-Dec-2020	22-Dec-2020	22-Dec-2020	22-Dec-2020	18-Dec-2020	22-Dec-2020	22-Dec-2020	22-Dec-2020	22-Dec-2020
Asbestos ID in Solid Samples	22-Dec-2020		22-Dec-2020		21-Dec-2020		21-Dec-2020		22-Dec-2020	
Cyanide Comp/Free/Total/Thiocyanate	18-Dec-2020	18-Dec-2020	18-Dec-2020	18-Dec-2020	18-Dec-2020	18-Dec-2020	18-Dec-2020	18-Dec-2020	18-Dec-2020	18-Dec-2020
EPH CWG GC (S)	13-Jan-2021	11-Jan-2021	15-Jan-2021	11-Jan-2021	13-Jan-2021	13-Jan-2021	11-Jan-2021	13-Jan-2021	12-Jan-2021	13-Jan-2021
GRO by GC-FID (S)	11-Jan-2021	12-Jan-2021	12-Jan-2021	12-Jan-2021	07-Jan-2021	13-Jan-2021	12-Jan-2021	12-Jan-2021	12-Jan-2021	13-Jan-2021
Metals in solid samples by OES	13-Jan-2021	22-Dec-2020	22-Dec-2020	13-Jan-2021	22-Dec-2020	13-Jan-2021	13-Jan-2021	22-Dec-2020	21-Dec-2020	13-Jan-2021
PAH by GCMS	17-Dec-2020	19-Dec-2020	17-Dec-2020	17-Dec-2020	19-Dec-2020	17-Dec-2020	17-Dec-2020	17-Dec-2020	17-Dec-2020	17-Dec-2020
pH	18-Dec-2020	17-Dec-2020	18-Dec-2020	17-Dec-2020	18-Dec-2020	17-Dec-2020	18-Dec-2020	16-Dec-2020	18-Dec-2020	16-Dec-2020
Phenols by HPLC (S)	20-Dec-2020	18-Dec-2020	18-Dec-2020	18-Dec-2020	18-Dec-2020	18-Dec-2020	20-Dec-2020	18-Dec-2020	20-Dec-2020	18-Dec-2020
Sample description	16-Dec-2020	16-Dec-2020	16-Dec-2020	16-Dec-2020	16-Dec-2020	16-Dec-2020	16-Dec-2020	16-Dec-2020	16-Dec-2020	16-Dec-2020
Total Organic Carbon	22-Dec-2020	22-Dec-2020	22-Dec-2020	22-Dec-2020	22-Dec-2020	22-Dec-2020	22-Dec-2020	22-Dec-2020	22-Dec-2020	22-Dec-2020
TPH CWG GC (S)	13-Jan-2021	12-Jan-2021	15-Jan-2021	12-Jan-2021	13-Jan-2021	13-Jan-2021	12-Jan-2021	13-Jan-2021	12-Jan-2021	13-Jan-2021
VOC MS (S)	08-Jan-2021	11-Jan-2021	11-Jan-2021	11-Jan-2021	07-Jan-2021	11-Jan-2021	11-Jan-2021	11-Jan-2021	11-Jan-2021	11-Jan-2021

Lab Sample No(s)	23432817	23432823	23432829	23432837	23432845	23432860	23432866	23432871	23432875	23432880
Customer Sample Ref.	2BN2-1	2BN2-2	2BN2-3	2BN2-4	2BN2-5	2BN2-6	2BN2-7	2BN2-12	2BN2-13	2BN2-14
AGS Ref.										
Depth	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
Ammonium Soil by Titration	22-Dec-2020	22-Dec-2020	22-Dec-2020	22-Dec-2020	22-Dec-2020	22-Dec-2020	22-Dec-2020	22-Dec-2020	22-Dec-2020	22-Dec-2020
Asbestos ID in Solid Samples	22-Dec-2020		22-Dec-2020		22-Dec-2020		22-Dec-2020		22-Dec-2020	
Cyanide Comp/Free/Total/Thiocyanate	17-Dec-2020	18-Dec-2020	17-Dec-2020	22-Dec-2020	22-Dec-2020	22-Dec-2020	18-Dec-2020	22-Dec-2020	18-Dec-2020	21-Dec-2020
EPH CWG GC (S)	14-Jan-2021	08-Jan-2021	08-Jan-2021	15-Jan-2021	08-Jan-2021	07-Jan-2021	08-Jan-2021	11-Jan-2021	08-Jan-2021	13-Jan-2021
GRO by GC-FID (S)	19-Jan-2021	12-Jan-2021	12-Jan-2021	19-Jan-2021	15-Jan-2021	19-Jan-2021	15-Jan-2021	18-Jan-2021	18-Jan-2021	12-Jan-2021
Metals in solid samples by OES	21-Dec-2020	13-Jan-2021	22-Dec-2020	21-Dec-2020	21-Dec-2020	22-Dec-2020	22-Dec-2020	22-Dec-2020	13-Jan-2021	13-Jan-2021
PAH by GCMS	22-Dec-2020	22-Dec-2020	17-Dec-2020	22-Dec-2020	22-Dec-2020	17-Dec-2020	22-Dec-2020	17-Dec-2020	19-Dec-2020	17-Dec-2020
pH	18-Dec-2020	16-Dec-2020	18-Dec-2020	16-Dec-2020	18-Dec-2020	16-Dec-2020	18-Dec-2020	16-Dec-2020	18-Dec-2020	17-Dec-2020
Phenols by HPLC (S)	20-Dec-2020	17-Dec-2020	18-Dec-2020	18-Dec-2020	17-Dec-2020	18-Dec-2020	17-Dec-2020	18-Dec-2020	20-Dec-2020	20-Dec-2020
Sample description	15-Dec-2020	15-Dec-2020	15-Dec-2020	15-Dec-2020	15-Dec-2020	15-Dec-2020	15-Dec-2020	15-Dec-2020	16-Dec-2020	16-Dec-2020
Total Organic Carbon	22-Dec-2020	22-Dec-2020	22-Dec-2020	22-Dec-2020	22-Dec-2020	22-Dec-2020	22-Dec-2020	22-Dec-2020	22-Dec-2020	22-Dec-2020
TPH CWG GC (S)	19-Jan-2021	12-Jan-2021	12-Jan-2021	19-Jan-2021	15-Jan-2021	19-Jan-2021	15-Jan-2021	18-Jan-2021	18-Jan-2021	13-Jan-2021
VOC MS (S)	15-Jan-2021	11-Jan-2021	11-Jan-2021	15-Jan-2021	14-Jan-2021	14-Jan-2021	14-Jan-2021	14-Jan-2021	14-Jan-2021	11-Jan-2021

Lab Sample No(s)	23432885	23432889	23432897	23432910	23432918	23432941	23432949	23432955	23432959	23432963
Customer Sample Ref.	2BN2-15	2BN2-16	2BN2-17	2BN2-18	2BN2-19	2BN2-20	2BN2-21	2BN2-22	2BN2-23	2BN2-24
AGS Ref.										
Depth	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
Ammonium Soil by Titration	22-Dec-2020	22-Dec-2020	22-Dec-2020	22-Dec-2020	22-Dec-2020	22-Dec-2020	22-Dec-2020	22-Dec-2020	22-Dec-2020	22-Dec-2020
Asbestos ID in Solid Samples	22-Dec-2020		22-Dec-2020		22-Dec-2020		22-Dec-2020		22-Dec-2020	
Cyanide Comp/Free/Total/Thiocyanate	17-Dec-2020	21-Dec-2020	18-Dec-2020	22-Dec-2020	22-Dec-2020	22-Dec-2020	21-Dec-2020	22-Dec-2020	22-Dec-2020	22-Dec-2020
EPH CWG GC (S)	14-Jan-2021	08-Jan-2021	15-Jan-2021	14-Jan-2021	08-Jan-2021	08-Jan-2021	07-Jan-2021	14-Jan-2021	13-Jan-2021	08-Jan-2021
GRO by GC-FID (S)	12-Jan-2021	18-Jan-2021	12-Jan-2021	15-Jan-2021	19-Jan-2021	18-Jan-2021	19-Jan-2021	18-Jan-2021	19-Jan-2021	18-Jan-2021
Metals in solid samples by OES	21-Dec-2020	13-Jan-2021	13-Jan-2021	22-Dec-2020	21-Dec-2020	22-Dec-2020	22-Dec-2020	21-Dec-2020	21-Dec-2020	22-Dec-2020
PAH by GCMS	22-Dec-2020	17-Dec-2020	17-Dec-2020	23-Dec-2020	22-Dec-2020	22-Dec-2020	17-Dec-2020	22-Dec-2020	17-Dec-2020	17-Dec-2020
pH	18-Dec-2020	17-Dec-2020	18-Dec-2020	16-Dec-2020	18-Dec-2020	16-Dec-2020	18-Dec-2020	16-Dec-2020	18-Dec-2020	16-Dec-2020
Phenols by HPLC (S)	22-Dec-2020	20-Dec-2020	18-Dec-2020	17-Dec-2020	17-Dec-2020	18-Dec-2020	20-Dec-2020	18-Dec-2020	17-Dec-2020	17-Dec-2020
Sample description	15-Dec-2020	16-Dec-2020	16-Dec-2020	15-Dec-2020	15-Dec-2020	15-Dec-2020	15-Dec-2020	15-Dec-2020	15-Dec-2020	15-Dec-2020
Total Organic Carbon	22-Dec-2020	22-Dec-2020	22-Dec-2020	22-Dec-2020	22-Dec-2020	22-Dec-2020	22-Dec-2020	22-Dec-2020	22-Dec-2020	22-Dec-2020
TPH CWG GC (S)	14-Jan-2021	18-Jan-2021	15-Jan-2021	15-Jan-2021	19-Jan-2021	18-Jan-2021	19-Jan-2021	18-Jan-2021	19-Jan-2021	18-Jan-2021
VOC MS (S)	11-Jan-2021	14-Jan-2021	11-Jan-2021	13-Jan-2021	14-Jan-2021	14-Jan-2021	15-Jan-2021	14-Jan-2021	15-Jan-2021	14-Jan-2021

Validated

CERTIFICATE OF ANALYSIS

SDG:	201215-62	**Client Reference:**	P18-669	**Report Number:**	583598
Location:	Llanwern	**Order Number:**		**Superseded Report:**	583597

Lab Sample No(s)	23432967	23432973	23432977	23432981	23432722	23432786	23432853	23432930	23432986	23432990
Customer Sample Ref.	2BN2-25	2BN2-26	2BN2-27	2BN2-28	2BSE-15	2BSE-16	2BSE-17	2BSE-18	2BSE-19	2BSE-20
AGS Ref.										
Depth	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
Ammonium Soil by Titration	22-Dec-2020	22-Dec-2020	22-Dec-2020	22-Dec-2020	22-Dec-2020	22-Dec-2020	22-Dec-2020	22-Dec-2020	22-Dec-2020	22-Dec-2020
Asbestos ID in Solid Samples	22-Dec-2020		22-Dec-2020		22-Dec-2020		22-Dec-2020		22-Dec-2020	
Calorific Value (S)*					04-Jan-2021	04-Jan-2021	04-Jan-2021	04-Jan-2021	04-Jan-2021	04-Jan-2021
Cyanide Comp/Free/Total/Thiocyanate	18-Dec-2020	21-Dec-2020	18-Dec-2020	17-Dec-2020	22-Dec-2020	18-Dec-2020	17-Dec-2020	17-Dec-2020	17-Dec-2020	17-Dec-2020
EPH CWG GC (S)	07-Jan-2021	11-Jan-2021	08-Jan-2021	08-Jan-2021	11-Jan-2021	11-Jan-2021	15-Jan-2021	08-Jan-2021	08-Jan-2021	08-Jan-2021
GRO by GC-FID (S)	19-Jan-2021	12-Jan-2021	18-Jan-2021	12-Jan-2021	15-Jan-2021	15-Jan-2021	15-Jan-2021	15-Jan-2021	19-Jan-2021	18-Jan-2021
Metals in solid samples by OES	21-Dec-2020	13-Jan-2021	13-Jan-2021	22-Dec-2020	22-Dec-2020	22-Dec-2020	21-Dec-2020	22-Dec-2020	21-Dec-2020	22-Dec-2020
PAH by GCMS	17-Dec-2020	17-Dec-2020	17-Dec-2020	17-Dec-2020	22-Dec-2020	22-Dec-2020	22-Dec-2020	22-Dec-2020	17-Dec-2020	21-Dec-2020
pH	18-Dec-2020	17-Dec-2020	18-Dec-2020	16-Dec-2020	18-Dec-2020	16-Dec-2020	18-Dec-2020	16-Dec-2020	18-Dec-2020	16-Dec-2020
Phenols by HPLC (S)	18-Dec-2020	18-Dec-2020	20-Dec-2020	17-Dec-2020	17-Dec-2020	20-Dec-2020	17-Dec-2020	17-Dec-2020	20-Dec-2020	21-Dec-2020
Sample description	15-Dec-2020	16-Dec-2020	16-Dec-2020	15-Dec-2020	15-Dec-2020	15-Dec-2020	15-Dec-2020	15-Dec-2020	15-Dec-2020	15-Dec-2020
Total Organic Carbon	22-Dec-2020	22-Dec-2020	22-Dec-2020	22-Dec-2020	22-Dec-2020	21-Dec-2020	22-Dec-2020	22-Dec-2020	22-Dec-2020	22-Dec-2020
TPH CWG GC (S)	19-Jan-2021	12-Jan-2021	18-Jan-2021	12-Jan-2021	15-Jan-2021	15-Jan-2021	15-Jan-2021	15-Jan-2021	19-Jan-2021	18-Jan-2021
VOC MS (S)	15-Jan-2021	11-Jan-2021	14-Jan-2021	11-Jan-2021	14-Jan-2021	13-Jan-2021	14-Jan-2021	13-Jan-2021	14-Jan-2021	14-Jan-2021

Lab Sample No(s)	23432994	23433001	23433006	23432728	23432735	23432740	23432745	23432753
Customer Sample Ref.	2BSE-21	2BSE-36	2BSE-37	2BSE-38	2BSE-39	2BSE-40	2BSE-41	2BSE-42
AGS Ref.								
Depth	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
Ammonium Soil by Titration	22-Dec-2020	22-Dec-2020	22-Dec-2020	22-Dec-2020	22-Dec-2020	22-Dec-2020	22-Dec-2020	22-Dec-2020
Asbestos ID in Solid Samples	22-Dec-2020		22-Dec-2020		22-Dec-2020		22-Dec-2020	
Calorific Value (S)*	04-Jan-2021							
Cyanide Comp/Free/Total/Thiocyanate	17-Dec-2020	21-Dec-2020	17-Dec-2020	21-Dec-2020	17-Dec-2020	22-Dec-2020	21-Dec-2020	22-Dec-2020
EPH CWG GC (S)	07-Jan-2021	11-Jan-2021	07-Jan-2021	07-Jan-2021	07-Jan-2021	08-Jan-2021	08-Jan-2021	13-Jan-2021
GRO by GC-FID (S)	18-Jan-2021	15-Jan-2021	19-Jan-2021	11-Jan-2021	15-Jan-2021	15-Jan-2021	19-Jan-2021	19-Jan-2021
Metals in solid samples by OES	21-Dec-2020	21-Dec-2020	21-Dec-2020	21-Dec-2020	21-Dec-2020	22-Dec-2020	22-Dec-2020	22-Dec-2020
PAH by GCMS	21-Dec-2020	22-Dec-2020	22-Dec-2020	22-Dec-2020	22-Dec-2020	17-Dec-2020	21-Dec-2020	21-Dec-2020
pH	18-Dec-2020	16-Dec-2020	18-Dec-2020	16-Dec-2020	18-Dec-2020	16-Dec-2020	18-Dec-2020	16-Dec-2020
Phenols by HPLC (S)	17-Dec-2020	20-Dec-2020	17-Dec-2020	20-Dec-2020	20-Dec-2020	17-Dec-2020	17-Dec-2020	17-Dec-2020
Sample description	15-Dec-2020	15-Dec-2020	15-Dec-2020	15-Dec-2020	15-Dec-2020	15-Dec-2020	15-Dec-2020	15-Dec-2020
Total Organic Carbon	22-Dec-2020	22-Dec-2020	22-Dec-2020	22-Dec-2020	22-Dec-2020	21-Dec-2020	22-Dec-2020	22-Dec-2020
TPH CWG GC (S)	18-Jan-2021	15-Jan-2021	19-Jan-2021	11-Jan-2021	15-Jan-2021	15-Jan-2021	19-Jan-2021	19-Jan-2021
VOC MS (S)	14-Jan-2021	14-Jan-2021	14-Jan-2021	11-Jan-2021	13-Jan-2021	13-Jan-2021	14-Jan-2021	15-Jan-2021

CERTIFICATE OF ANALYSIS

Work Order	: **PR20C5995**	Issue Date	: 04-Jan-2021
Customer	: **ALS Life Sciences Ltd**	Laboratory	: ALS Czech Republic, s.r.o.
Contact	: ALS Hawarden Reporting	Contact	: Client Service
Address	: Unit 7-8 Hawarden Business Park Manor Road, Hawarden CH5 3US Deeside United Kingdom	Address	: Na Harfe 336/9 Prague 9 - Vysocany 190 00 Czech Republic
E-mail	: euhdnsubconresults@ALSGlobal.com	E-mail	: customer.support@alsglobal.com
Telephone	: ----	Telephone	: +420 226 226 228
Project	: 201215-62	Page	: 1 of 3
Order number	: ----	Date Samples Received	: 17-Dec-2020
		Quote number	: PR2018ALSAL-GB0004 (CZ-256-18-0022)
Site	: ----	Date of test	: 18-Dec-2020 - 04-Jan-2021
Sampled by	: client	QC Level	: ALS CR Standard Quality Control Schedule

General Comments

This report shall not be reproduced except in full, without prior written approval from the laboratory.

The laboratory declares that the test results relate only to the listed samples. If the section "Sampled by" of the Certificate of analysis states: "Sampled by Customer" then the results relate to the sample as received.

Responsible for accuracy

Testing Laboratory No. 1163
Accredited by CAI according to
CSN EN ISO/IEC 17025:2018

Signatories		*Position*
Zdeněk Jirák		Environmental Business Unit Manager

The company is certified according to ČSN EN ISO 14001 (Environmental management systems) and ČSN ISO 45001 (Occupational health and safety management systems)

Analytical Results

Sub-Matrix: **SOIL**

				Client sample ID	23435281 2BSE-15		23436085 2BSE-16		23436180 2BSE-17	
				Laboratory sample ID	PR20C5995-001		PR20C5995-002		PR20C5995-003	
				Client sampling date / time	15-Dec-2020 13:13		15-Dec-2020 14:32		15-Dec-2020 14:38	
Parameter	*Method*	*LOR*	*Unit*		**Result**	**MU**	**Result**	**MU**	**Result**	**MU**
Physical Parameters										
Gross Calorific Value in Dry Matter Q(V/gr/d)	I-CV-CALS	0.50	MJ/kg DW		**3.37**	± 14.1%	**2.27**	± 17.8%	**3.19**	± 14.5%
Gross Calorific Value Original Q(V/gr/ar)	I-CV-CALS	0.50	MJ/kg		**2.93**	± 15.1%	**1.97**	± 19.6%	**2.65**	± 16.1%
Net Calorific Value in Dry Matter Q(V/net/d)	I-CV-CALS	0.50	MJ/kg DW		**3.15**	± 14.6%	**2.11**	± 18.7%	**3.07**	± 14.8%
Net Calorific Value Original Q(V/net/ar)	I-CV-CALS	0.50	MJ/kg		**2.44**	± 16.9%	**1.53**	± 24.0%	**2.16**	± 18.4%
Water Analytical M(ad)	I-WA-GR	0.50	%		**1.43**	± 30.7%	**0.89**	± 42.4%	**1.33**	± 32.0%
Water Gross M(ex)	I-WG-GR	0.50	%		**11.6**	± 20.2%	**12.5**	± 20.2%	**15.8**	± 20.1%
Water Total M(ar)	I-WT-CC	0.50	%		**12.9**	----	**13.2**	----	**16.9**	----
Dry matter @ 105°C	S-DRY-GRCI	0.10	%		**87.1**	± 6.0%	**86.8**	± 6.0%	**83.1**	± 6.0%

Sub-Matrix: **SOIL**

				Client sample ID	23435732 2BSE-18		23436788 2BSE-19		23436425 2BSE-20	
				Laboratory sample ID	PR20C5995-004		PR20C5995-005		PR20C5995-006	
				Client sampling date / time	15-Dec-2020 14:01		15-Dec-2020 15:27		15-Dec-2020 14:55	
Parameter	*Method*	*LOR*	*Unit*		**Result**	**MU**	**Result**	**MU**	**Result**	**MU**
Physical Parameters										
Gross Calorific Value in Dry Matter Q(V/gr/d)	I-CV-CALS	0.50	MJ/kg DW		**5.66**	± 11.6%	**1.07**	± 32.7%	**3.64**	± 13.6%
Gross Calorific Value Original Q(V/gr/ar)	I-CV-CALS	0.50	MJ/kg		**4.76**	± 12.2%	**0.93**	± 37.2%	**3.35**	± 14.1%
Net Calorific Value in Dry Matter Q(V/net/d)	I-CV-CALS	0.50	MJ/kg DW		**5.40**	± 11.8%	**0.94**	± 36.8%	**3.50**	± 13.8%
Net Calorific Value Original Q(V/net/ar)	I-CV-CALS	0.50	MJ/kg		**4.18**	± 12.8%	**0.52**	± 64.9%	**3.04**	± 14.8%
Water Analytical M(ad)	I-WA-GR	0.50	%		**1.36**	± 31.6%	**1.02**	± 38.2%	**0.59**	± 59.7%
Water Gross M(ex)	I-WG-GR	0.50	%		**14.7**	± 20.1%	**12.0**	± 20.2%	**7.35**	± 20.5%
Water Total M(ar)	I-WT-CC	0.50	%		**15.9**	----	**13.0**	----	**7.90**	----
Dry matter @ 105°C	S-DRY-GRCI	0.10	%		**84.1**	± 6.0%	**87.0**	± 6.0%	**92.1**	± 6.0%

Sub-Matrix: **SOIL**

				Client sample ID	23436315 2BSE-21		----		----	
				Laboratory sample ID	PR20C5995-007		----		----	
				Client sampling date / time	15-Dec-2020 14:45		----		----	
Parameter	*Method*	*LOR*	*Unit*		**Result**	**MU**	**Result**	**MU**	**Result**	**MU**
Physical Parameters										
Gross Calorific Value in Dry Matter Q(V/gr/d)	I-CV-CALS	0.50	MJ/kg DW		**3.18**	± 14.5%	**----**	----	**----**	----
Gross Calorific Value Original Q(V/gr/ar)	I-CV-CALS	0.50	MJ/kg		**2.82**	± 15.5%	**----**	----	**----**	----
Net Calorific Value in Dry Matter Q(V/net/d)	I-CV-CALS	0.50	MJ/kg DW		**3.00**	± 14.9%	**----**	----	**----**	----
Net Calorific Value Original Q(V/net/ar)	I-CV-CALS	0.50	MJ/kg		**2.40**	± 17.1%	**----**	----	**----**	----
Water Analytical M(ad)	I-WA-GR	0.50	%		**0.87**	± 43.2%	**----**	----	**----**	----
Water Gross M(ex)	I-WG-GR	0.50	%		**10.6**	± 20.2%	**----**	----	**----**	----
Water Total M(ar)	I-WT-CC	0.50	%		**11.4**	----	**----**	----	**----**	----
Dry matter @ 105°C	S-DRY-GRCI	0.10	%		**88.6**	± 6.0%	**----**	----	**----**	----

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes. Measurement uncertainty is expressed as expanded measurement

uncertainty with coverage factor k = 2, representing 95% confidence level.
Key: LOR = Limit of reporting; MU = Measurement Uncertainty. The MU does not include sampling uncertainty.

The end of result part of the certificate of analysis

Brief Method Summaries

Analytical Methods	*Method Descriptions*
Location of test performance: Bendlova 1687/7 Ceska Lipa Czech Republic 470 01	
I-CV-CALS	CZ_SOP_D06_07_124.A (CSN ISO 1928, CSN EN ISO 18125, CSN EN 15400, CSN EN 15170, CSN DIN 51900-1, CSN DIN 51900-2, CSN DIN 51900-3, CSN P CEN/TS 16023) Determination of gross calorific value by calorimetric method and calculation of net calorific value and emission factor by calculation from measured values.
I-WA-GR	CZ_SOP_D06_07_041 (CSN 44 1377, CSN EN ISO 18134-1, CSN EN ISO 18134-2, CSN EN ISO 18134-3, CSN P CEN/TS 15414-1, CSN P CEN/TS 15414-2, CSN EN 15414-3, CSN EN12880, CSN EN14346, CSN EN 15002) Determination of analytical water and gross water by gravimetry and determination of total water by calculation from measured values.
I-WG-GR	CZ_SOP_D06_07_041 (CSN 44 1377, CSN EN ISO 18134-1, CSN EN ISO 18134-2, CSN EN ISO 18134-3, CSN P CEN/TS 15414-1, CSN P CEN/TS 15414-2, CSN EN 15414-3, CSN EN12880, CSN EN14346, CSN EN 15002) Determination of analytical water and gross water by gravimetry and determination of total water by calculation from measured values.
I-WT-CC	CZ_SOP_D06_07_041 (CSN 44 1377, CSN EN ISO 18134-1, CSN EN ISO 18134-2, CSN EN ISO 18134-3, CSN P CEN/TS 15414-1, CSN P CEN/TS 15414-2, CSN EN 15414-3, CSN EN12880, CSN EN14346, CSN EN 15002) Determination of analytical water and gross water by gravimetry and determination of total water by calculation from measured values.
S-DRY-GRCI	CZ_SOP_D06_01_045 (CSN ISO 11465, CSN EN 12880, CSN EN 14346:2007), CZ_SOP_D06_07_046 (CSN ISO 11465, CSN EN 12880, CSN EN 14346, CSN 46 5735) Determination of dry matter by gravimetry and determination of moisture by calculation from measured values.

Preparation Methods	*Method Descriptions*
Location of test performance: Bendlova 1687/7 Ceska Lipa Czech Republic 470 01	
I-PPBURN	Sample combustion in a calorimetric bomb for fuel tests
* S-PPHOM.07	CZ_SOP_D06_07_P01 Preparation of solid samples for analysis (crushing, milling and pulverizing).
* S-PPHOM0.3	CZ_SOP_D06_07_P01 Preparation of solid samples for analysis (crushing, milling and pulverizing).

A `*` symbol preceding any method indicates laboratory or subcontractor non-accredited test. In the case when a procedure belonging to an accredited method was used for non-accredited matrix, would apply that the reported results are non-accredited. Please refer to General Comment section on front page for information. If the report contains subcontracted analysis, those are made in a subcontracted laboratory outside the laboratories ALS Czech Republic, s.r.o.
The calculation methods of summation parameters are available on request in the client service.

Appendix General

1. Results are expressed on a dry weight basis (dried at 35ºC) for all soil analyses except for the following: NRA and CEN Leach tests, flash point LOI, pH, ammonium as NH4 by the BRE method, VOC TICs and SVOC TICs.

2. If sufficient sample is received a sub sample will be retained free of charge for 30 days after analysis is completed (e-mailed) for all sample types unless the sample is destroyed on testing. The prepared soil sub sample that is analysed for asbestos will be retained for a period of 6 months after the analysis date. All bulk samples will be retained for a period of 6 months after the analysis date. All samples received and not scheduled will be disposed of one month after the date of receipt unless we are instructed to the contrary. Once the initial period has expired, a storage charge will be applied for each month or part thereof until the client cancels the request for sample storage. ALS reserve the right to charge for samples received and stored but not analysed.

3. With respect to turnaround, we will always endeavour to meet client requirements wherever possible, but turnaround times cannot be absolutely guaranteed due to so many variables beyond our control.

4. We take responsibility for any test performed by sub-contractors (marked with an asterisk). We endeavour to use UKAS/MCERTS Accredited Laboratories, who either complete a quality questionnaire or are audited by ourselves. For some determinands there are no UKAS/MCERTS Accredited Laboratories, in this instance a laboratory with a known track record will be utilised.

5. If no separate volatile sample is supplied by the client, or if a headspace or sediment is present in the volatile sample, the integrity of the data may be compromised. This will be flagged up as an invalid VOC on the test schedule and the result marked as deviating on the test certificate.

6. NDP - No determination possible due to insufficient/unsuitable sample.

7. Results relate only to the items tested.

8. LoDs (Limit of Detection) for wet tests reported on a dry weight basis are not corrected for moisture content.

9. **Surrogate recoveries** - Surrogates are added to your sample to monitor recovery of the test requested. A % recovery is reported, results are not corrected for the recovery measured. Typical recoveries for organics tests are 70-130%. Recoveries in soils are affected by organic rich or clay rich matrices. Waters can be affected by remediation fluids or high amounts of sediment. Test results are only ever reported if all of the associated quality checks pass; it is assumed that all recoveries outside of the values above are due to matrix affect.

10. Stones/debris are not routinely removed. We always endeavour to take a representative sub sample from the received sample.

11. In certain circumstances the method detection limit may be elevated due to the sample being outside the calibration range. Other factors that may contribute to this include possible interferences. In both cases the sample would be diluted which would cause the method detection limit to be raised.

12. Mercury results quoted on soils will not include volatile mercury as the analysis is performed on a dried and crushed sample.

13. For leachate preparations other than Zero Headspace Extraction (ZHE) volatile loss may occur.

14. For the BSEN 12457-3 two batch process to allow the cumulative release to be calculated, the volume of the leachate produced is measured and filtered for all tests. We therefore cannot carry out any unfiltered analysis. The tests affected include volatiles GCFID/GCMS and all subcontracted analysis.

15. Analysis and identification of specific compounds using GCFID is by retention time only, and we routinely calibrate and quantify for benzene, toluene, ethylbenzenes and xylenes (BTEX). For total volatiles in the C5-C12 range, the total area of the chromatogram is integrated and expressed as ug/kg or ug/l. Although this analysis is commonly used for the quantification of gasoline range organics (GRO), the system will also detect other compounds such as chlorinated solvents, and this may lead to a falsely high result with respect to hydrocarbons only. It is not possible to specifically identify these non-hydrocarbons, as standards are not routinely run for any other compounds, and for more definitive identification, volatiles by GCMS should be utilised.

16. We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample. Other coarse granular material such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

17. **Tentatively Identified Compounds (TICs)** are non-target peaks in VOC and SVOC analysis. All non-target peaks detected with a concentration above the LoD are subjected to a mass spectral library search. Non-target peaks with a library search confidence of >75% are reported based on the best mass spectral library match. When a non-target peak with a library search confidence of <75% is detected it is reported as "mixed hydrocarbons". Non-target compounds identified from the scan data are semi-quantified relative to one of the deuterated internal standards, under the same chromatographic conditions as the target compounds. This result is reported as a semi-quantitative value and reported as Tentatively Identified Compounds (TICs). TICs are outside the scope of UKAS accreditation and are not moisture corrected.

18. **Sample Deviations**

If a sample is classed as deviated then the associated results may be compromised.

1	**Container with Headspace provided for volatiles analysis**
2	**Incorrect container received**
3	**Deviation from method**
4	**Matrix interference**
♦	**Sample holding time exceeded in laboratory**
@	**Sample holding time exceeded due to late arrival of instructions or samples**
§	**Sampled on date not provided**

19. **Asbestos**

When requested, the individual sub sample scheduled will be analysed in house for the presence of asbestos fibres and asbestos containing material by our documented in house method TM048 based on HSG 248 (2005), which is accredited to ISO17025. If a specific asbestos fibre type is not found this will be reported as "Not detected". If no asbestos fibre types are found all will be reported as "Not detected" and the sub sample analysed deemed to be clear of asbestos. If an asbestos fibre type is found it will be reported as detected (for each fibre type found). Testing can be carried out on asbestos positive samples, but, due to Health and Safety considerations, may be replaced by alternative tests or reported as No Determination Possible (NDP). The quantity of asbestos present is not determined unless specifically requested.

Identification of Asbestos in Bulk Materials & Soils

The results for identification of asbestos in bulk materials are obtained from supplied bulk materials which have been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

The results for identification of asbestos in soils are obtained from a homogenised sub sample which has been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

Asbestos Type	Common Name
Chrysotile	White Asbestos
Amosite	Brown Asbestos
Crocidolite	Blue Asbestos
Fibrous Actinolite	-
Fibrous Anthophyllite	-
Fibrous Tremolite	-

Visual Estimation Of Fibre Content

Estimation of fibre content is not permitted as part of our UKAS accredited test other than: - Trace - Where only one or two asbestos fibres were identified.

Respirable Fibres

Respirable fibres are defined as fibres of <3 µm diameter, longer than 5 µm and with aspect ratios of at least 3:1 that can be inhaled into the lower regions of the lung and are generally acknowledged to be most important predictor of hazard and risk for cancers of the lung.
Standing Committee of Analysts, *The Quantification of Asbestos in Soil (2017).*

Further guidance on typical asbestos fibre content of manufactured products can be found in HSG 264.

The identification of asbestos containing materials and soils falls within our schedule of tests for which we hold UKAS accreditation, however opinions, interpretations and all other information contained in the report are outside the scope of UKAS accreditation.

Unit 7-8 Hawarden Business Park
Manor Road (off Manor Lane)
Hawarden
Deeside
CH5 3US
Tel: (01244) 528700
Fax: (01244) 528701
email: hawardencustomerservices@alsglobal.com
Website: www.alsenvironmental.co.uk

Rodgers Leask
Office 225
2430/2440
Aztec West
Almondsbury
Bristol
BS32 4QA

Attention: Elliot Thomas

CERTIFICATE OF ANALYSIS

Date of report Generation:	21 January 2021
Customer:	Rodgers Leask
Sample Delivery Group (SDG):	201216-93
Your Reference:	P18-669
Location:	Llanwern
Report No:	584015

We received 53 samples on Wednesday December 16, 2020 and 52 of these samples were scheduled for analysis which was completed on Tuesday January 19, 2021. Accredited laboratory tests are defined within the report, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation.

Should this report require incorporation into client reports, it must be used in its entirety and not simply with the data sections alone.

Chemical testing (unless subcontracted) performed at ALS Life Sciences Ltd Hawarden (Method codes TM) or ALS Life Sciences Ltd Aberdeen (Method codes S).

All sample data is provided by the customer. The reported results relate to the sample supplied, and on the basis that this data is correct.
Incorrect sampling dates and/or sample information will affect the validity of results.
The customer is not permitted to reproduce this report except in full without the approval of the laboratory.

Approved By:

Sonia McWhan

Operations Manager

CERTIFICATE OF ANALYSIS

SDG:	201216-93	**Client Reference:**	P18-669	**Report Number:**	584015
Location:	Llanwern	**Order Number:**	108281	**Superseded Report:**	

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
23443672	4A Comp -1		0.00 - 0.00	15/12/2020
23443677	4A Comp -2		0.00 - 0.00	15/12/2020
23443682	4A Comp -3		0.00 - 0.00	15/12/2020
23443686	4A Comp -4		0.00 - 0.00	15/12/2020
23443692	4A Comp -5		0.00 - 0.00	15/12/2020
23443697	4A Comp -6		0.00 - 0.00	15/12/2020
23443706	4A Comp -7		0.00 - 0.00	15/12/2020
23443738	4A Comp -8		0.00 - 0.00	15/12/2020
23443748	4A Comp -9		0.00 - 0.00	15/12/2020
23443757	4A Comp -10		0.00 - 0.00	15/12/2020
23443767	4A Comp -11		0.00 - 0.00	15/12/2020
23443778	4A Comp -12		0.00 - 0.00	15/12/2020
23443783	4A Comp -13		0.00 - 0.00	15/12/2020
23443787	4A Comp -14		0.00 - 0.00	15/12/2020
23443791	4A Comp -15		0.00 - 0.00	15/12/2020
23443796	4A Comp -16		0.00 - 0.00	15/12/2020
23443807	4A Comp -17		0.00 - 0.00	15/12/2020
23443818	4A Comp -18		0.00 - 0.00	15/12/2020
23443824	4A Comp -19		0.00 - 0.00	15/12/2020
23443829	4A Comp -20		0.00 - 0.00	15/12/2020
23443833	4A Comp -21		0.00 - 0.00	15/12/2020
23443841	4A Comp -22		0.00 - 0.00	15/12/2020
23443847	4A Comp -23		0.00 - 0.00	15/12/2020
23443854	4A Comp -24		0.00 - 0.00	15/12/2020
23443860	4A Comp -25		0.00 - 0.00	15/12/2020
23443867	4A Comp -26		0.00 - 0.00	15/12/2020
23443873	4A Comp -27		0.00 - 0.00	15/12/2020
23443886	4A Comp -28		0.00 - 0.00	15/12/2020
23443893	4A Comp -29		0.00 - 0.00	15/12/2020
23443897	4A Comp -30		0.00 - 0.00	15/12/2020
23443903	4A Comp -31		0.00 - 0.00	15/12/2020
23443908	4A Comp -32		0.00 - 0.00	15/12/2020
23443913	4A Comp -33		0.00 - 0.00	15/12/2020
23443919	4A Comp -34		0.00 - 0.00	15/12/2020
23443926	4A Comp -35		0.00 - 0.00	15/12/2020
23443933	4A Comp -36		0.00 - 0.00	15/12/2020
23443944	4A Comp -37		0.00 - 0.00	15/12/2020
23443961	4A Comp -38		0.00 - 0.00	15/12/2020
23443967	4A Comp -39		0.00 - 0.00	15/12/2020
23443973	4A Comp -40		0.00 - 0.00	15/12/2020
23443648	2BN2-8		0.00 - 0.00	14/12/2020
23443730	2BN2-9		0.00 - 0.00	14/12/2020
23443814	2BN2-10		0.00 - 0.00	14/12/2020
23443880	2BN2-11		0.00 - 0.00	14/12/2020
23443952	2BN2-29		0.00 - 0.00	14/12/2020
23443977	2BN2-30		0.00 - 0.00	14/12/2020
23443986	2BN2-31		0.00 - 0.00	14/12/2020
23443995	2BN2-32		0.00 - 0.00	14/12/2020
23444000	2BN2-33		0.00 - 0.00	14/12/2020
23443655	2BN2-34		0.00 - 0.00	14/12/2020
23443659	2BN2-35		0.00 - 0.00	14/12/2020
23443664	2BN2-36		0.00 - 0.00	14/12/2020
23444008	NO SAMPLE ID			

Only received samples which have had analysis scheduled will be shown on the following pages.

CERTIFICATE OF ANALYSIS

SDG:	201216-93	**Client Reference:**	P18-669	**Report Number:**	584015
Location:	Llanwern	**Order Number:**	108281	**Superseded Report:**	

Results Legend

X Test

N No Determination Possible

Sample Types -

S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

Lab Sample No(s)			23443672		23443677		23443682		23443686		23443692		23443697		23443706		23443738				
Customer Sample Reference			4A Comp -1		4A Comp -2		4A Comp -3		4A Comp -4		4A Comp -5		4A Comp -6		4A Comp -7		4A Comp -8				
AGS Reference																					
Depth (m)			0.00 - 0.00		0.00 - 0.00		0.00 - 0.00		0.00 - 0.00		0.00 - 0.00		0.00 - 0.00		0.00 - 0.00		0.00 - 0.00				
Container			1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)
Sample Type			S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
Ammonium Soil by Titration	All	NDPs: 0 Tests: 52		X		X			X		X			X		X			X		X
Asbestos ID in Solid Samples	All	NDPs: 0 Tests: 26	X					X					X					X			
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 52		X		X			X		X			X		X			X		X
EPH CWG GC (S)	All	NDPs: 0 Tests: 52		X		X			X		X			X		X		X			X
GRO by GC-FID (S)	All	NDPs: 0 Tests: 52			X		X			X		X			X		X			X	
Metals in solid samples by OES	All	NDPs: 0 Tests: 52		X		X			X		X			X		X			X		X
PAH by GCMS	All	NDPs: 0 Tests: 52		X		X			X		X			X		X			X		X
pH	All	NDPs: 0 Tests: 52		X		X			X		X			X		X			X		X
Phenols by HPLC (S)	All	NDPs: 0 Tests: 52		X		X			X		X			X		X			X		X
Sample description	All	NDPs: 0 Tests: 52		X		X			X		X			X		X			X		X
Total Organic Carbon	All	NDPs: 0 Tests: 52		X		X			X		X			X		X			X		X
TPH CWG GC (S)	All	NDPs: 0 Tests: 52		X		X			X		X			X		X		X			X
VOC MS (S)	All	NDPs: 0 Tests: 52			X		X			X		X			X		X			X	

23443796	4A Comp -16		0.00 - 0.00	250g Amber Jar (ALE210)	S		x			x		x			x		x		x		x		
23443791	4A Comp -15		0.00 - 0.00	60g VOC (ALE215)	S								x										x
				250g Amber Jar (ALE210)	S		x			x				x		x		x		x		x		
				1kg TUB with Handle (ALE260)	S				x			x										x		
23443787	4A Comp -14		0.00 - 0.00	60g VOC (ALE215)	S						x		x									x		x
				250g Amber Jar (ALE210)	S		x			x				x		x		x		x		x		
23443783	4A Comp -13		0.00 - 0.00	60g VOC (ALE215)	S						x		x									x		x
				250g Amber Jar (ALE210)	S		x			x				x		x		x		x		x		
				1kg TUB with Handle (ALE260)	S				x															
23443778	4A Comp -12		0.00 - 0.00	60g VOC (ALE215)	S							x												x
				250g Amber Jar (ALE210)	S		x			x				x		x		x		x		x		
				1kg TUB with Handle (ALE260)	S						x												x	
23443767	4A Comp -11		0.00 - 0.00	60g VOC (ALE215)	S							x												x
				250g Amber Jar (ALE210)	S		x			x		x			x		x		x		x		x		
				1kg TUB with Handle (ALE260)	S				x															
23443757	4A Comp -10		0.00 - 0.00	60g VOC (ALE215)	S							x												x
				250g Amber Jar (ALE210)	S		x			x		x			x		x		x		x		x		
23443748	4A Comp -9		0.00 - 0.00	60g VOC (ALE215)	S							x												x
				250g Amber Jar (ALE210)	S		x			x		x			x		x		x		x		x		
				1kg TUB with Handle (ALE260)	S				x															
23443738	4A Comp -8		0.00 - 0.00	60g VOC (ALE215)	S							x												x

CERTIFICATE OF ANALYSIS

SDG:	201216-93	**Client Reference:**	P18-669	**Report Number:**	584015
Location:	Llanwern	**Order Number:**	108281	**Superseded Report:**	

Results Legend

X Test

N No Determination Possible

Sample Types -
S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
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US - Untreated Sewage
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DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

Lab Sample No(s)			23443796		23443807		23443818		23443824		23443829		23443833		23443841		23443847				
Customer Sample Reference			4A Comp -16		4A Comp -17		4A Comp -18		4A Comp -19		4A Comp -20		4A Comp -21		4A Comp -22		4A Comp -23				
AGS Reference																					
Depth (m)			0.00 - 0.00		0.00 - 0.00		0.00 - 0.00		0.00 - 0.00		0.00 - 0.00		0.00 - 0.00		0.00 - 0.00		0.00 - 0.00				
Container			60g VOC (ALE215)	1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)
Sample Type			S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
Ammonium Soil by Titration	All	NDPs: 0 Tests: 52			X		X			X		X			X			X			X
Asbestos ID in Solid Samples	All	NDPs: 0 Tests: 26		X					X					X						X	
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 52			X		X			X		X			X			X			X
EPH CWG GC (S)	All	NDPs: 0 Tests: 52			X		X			X		X			X		X				X
GRO by GC-FID (S)	All	NDPs: 0 Tests: 52	X			X		X			X		X			X			X			
Metals in solid samples by OES	All	NDPs: 0 Tests: 52			X		X			X		X			X			X			X
PAH by GCMS	All	NDPs: 0 Tests: 52			X		X			X		X			X			X			X
pH	All	NDPs: 0 Tests: 52			X		X			X		X			X			X			X
Phenols by HPLC (S)	All	NDPs: 0 Tests: 52			X		X			X		X			X			X			X
Sample description	All	NDPs: 0 Tests: 52			X		X			X		X			X			X			X
Total Organic Carbon	All	NDPs: 0 Tests: 52			X		X			X		X			X			X			X
TPH CWG GC (S)	All	NDPs: 0 Tests: 52			X		X			X		X			X		X				X
VOC MS (S)	All	NDPs: 0 Tests: 52	X			X		X			X		X			X			X			

23443903	4A Comp -31		0.00 - 0.00	250g Amber Jar (ALE210)	S	X		X			X	X	X	X	X	X		
				1kg TUB with Handle (ALE260)	S		X		X								X	
23443897	4A Comp -30		0.00 - 0.00	60g VOC (ALE215)	S					X								X
				250g Amber Jar (ALE210)	S	X		X			X	X	X	X	X	X		
				1kg TUB with Handle (ALE260)	S				X								X	
23443893	4A Comp -29		0.00 - 0.00	60g VOC (ALE215)	S					X								X
				250g Amber Jar (ALE210)	S	X		X	X		X	X	X	X	X	X	X	
				1kg TUB with Handle (ALE260)	S		X											
23443886	4A Comp -28		0.00 - 0.00	60g VOC (ALE215)	S					X								X
				250g Amber Jar (ALE210)	S	X		X	X		X	X	X	X	X	X	X	
23443873	4A Comp -27		0.00 - 0.00	60g VOC (ALE215)	S					X								X
				250g Amber Jar (ALE210)	S	X		X	X		X	X	X	X	X	X	X	
				1kg TUB with Handle (ALE260)	S		X											
23443867	4A Comp -26		0.00 - 0.00	60g VOC (ALE215)	S					X								X
				250g Amber Jar (ALE210)	S	X		X	X		X	X	X	X	X	X	X	
23443860	4A Comp -25		0.00 - 0.00	60g VOC (ALE215)	S					X								X
				250g Amber Jar (ALE210)	S	X		X	X		X	X	X	X	X	X	X	
				1kg TUB with Handle (ALE260)	S		X											
23443854	4A Comp -24		0.00 - 0.00	60g VOC (ALE215)	S					X								X
				250g Amber Jar (ALE210)	S	X		X	X		X	X	X	X	X	X	X	
23443847	4A Comp -23		0.00 - 0.00	60g VOC (ALE215)	S					X								X

Validated

CERTIFICATE OF ANALYSIS

SDG:	201216-93	**Client Reference:**	P18-669	**Report Number:**	584015
Location:	Llanwern	**Order Number:**	108281	**Superseded Report:**	

Results Legend

X Test

N No Determination Possible

Sample Types -

S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

Lab Sample No(s)			23443903	23443908		23443913			23443919			23443926			23443933			23443944		23443961	
Customer Sample Reference			4A Comp -31	4A Comp -32		4A Comp -33			4A Comp -34			4A Comp -35			4A Comp -36			4A Comp -37		4A Comp -38	
AGS Reference																					
Depth (m)			0.00 - 0.00	0.00 - 0.00		0.00 - 0.00			0.00 - 0.00			0.00 - 0.00			0.00 - 0.00			0.00 - 0.00		0.00 - 0.00	
Container			60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)
Sample Type			S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
Ammonium Soil by Titration	All	NDPs: 0 Tests: 52		X			X			X			X		X			X		X	
Asbestos ID in Solid Samples	All	NDPs: 0 Tests: 26				X						X					X				
Asbestos Quantification - Full	All	NDPs: 0 Tests: 1																			
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 52		X			X			X			X		X			X		X	
EPH CWG GC (S)	All	NDPs: 0 Tests: 52		X		X			X				X		X			X		X	
GRO by GC-FID (S)	All	NDPs: 0 Tests: 52	X		X			X			X			X		X			X		X	
Metals in solid samples by OES	All	NDPs: 0 Tests: 52		X			X			X			X		X			X		X	
PAH by GCMS	All	NDPs: 0 Tests: 52		X			X			X			X		X			X		X	
pH	All	NDPs: 0 Tests: 52		X			X			X			X		X			X		X	
Phenols by HPLC (S)	All	NDPs: 0 Tests: 52		X			X			X			X		X			X		X	
Sample description	All	NDPs: 0 Tests: 52		X			X			X			X		X			X		X	
Total Organic Carbon	All	NDPs: 0 Tests: 52		X			X			X			X		X			X		X	
TPH CWG GC (S)	All	NDPs: 0 Tests: 52		X		X			X				X		X			X		X	
VOC MS (S)	All	NDPs: 0 Tests: 52	X		X			X			X			X		X			X		X	

23443986	2BN2-31		0.00 - 0.00	1kg TUB with Handle (ALE260)	S			X													
23443977	2BN2-30		0.00 - 0.00	60g VOC (ALE215)	S							X									X
				250g Amber Jar (ALE210)	S	X				X	X		X	X	X	X	X	X	X		
23443952	2BN2-29		0.00 - 0.00	60g VOC (ALE215)	S							X									X
				250g Amber Jar (ALE210)	S	X				X	X		X	X	X	X	X	X	X		
				1kg TUB with Handle (ALE260)	S			X													
23443880	2BN2-11		0.00 - 0.00	60g VOC (ALE215)	S							X									X
				250g Amber Jar (ALE210)	S	X				X	X		X	X	X	X	X	X	X		
23443814	2BN2-10		0.00 - 0.00	60g VOC (ALE215)	S							X									X
				250g Amber Jar (ALE210)	S	X				X	X		X	X	X	X	X	X	X		
				1kg TUB with Handle (ALE260)	S			X													
23443730	2BN2-9		0.00 - 0.00	60g VOC (ALE215)	S							X									X
				250g Amber Jar (ALE210)	S	X				X	X		X	X	X	X	X	X	X		
23443648	2BN2-8		0.00 - 0.00	60g VOC (ALE215)	S							X									X
				250g Amber Jar (ALE210)	S	X				X	X		X	X	X	X	X	X	X		
				1kg TUB with Handle (ALE260)	S			X													
23443973	4A Comp -40		0.00 - 0.00	60g VOC (ALE215)	S							X									X
				250g Amber Jar (ALE210)	S	X				X	X		X	X	X	X	X	X	X		
23443967	4A Comp -39		0.00 - 0.00	60g VOC (ALE215)	S							X									X
				250g Amber Jar (ALE210)	S	X				X	X		X	X	X	X	X	X	X		
				1kg TUB with Handle (ALE260)	S			X	X												

CERTIFICATE OF ANALYSIS

SDG:	201216-93	**Client Reference:**	P18-669	**Report Number:**	584015
Location:	Llanwern	**Order Number:**	108281	**Superseded Report:**	

Results Legend

- X — Test
- N — No Determination Possible

Sample Types -

S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
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US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

Lab Sample No(s)			23443986		23443995		23444000			23443655		23443659			23443664	
Customer Sample Reference			2BN2-31		2BN2-32		2BN2-33			2BN2-34		2BN2-35			2BN2-36	
AGS Reference																
Depth (m)			0.00 - 0.00		0.00 - 0.00		0.00 - 0.00			0.00 - 0.00		0.00 - 0.00			0.00 - 0.00	
Container			250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)
Sample Type			S	S	S	S	S	S	S	S	S	S	S	S	S	S
Ammonium Soil by Titration	All	NDPs: 0 Tests: 52	X		X			X		X			X		X	
Asbestos ID in Solid Samples	All	NDPs: 0 Tests: 26					X					X				
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 52	X		X			X		X			X		X	
EPH CWG GC (S)	All	NDPs: 0 Tests: 52	X		X			X		X			X		X	
GRO by GC-FID (S)	All	NDPs: 0 Tests: 52		X		X			X		X			X		X
Metals in solid samples by OES	All	NDPs: 0 Tests: 52	X		X			X		X			X		X	
PAH by GCMS	All	NDPs: 0 Tests: 52	X		X			X		X			X		X	
pH	All	NDPs: 0 Tests: 52	X		X			X		X			X		X	
Phenols by HPLC (S)	All	NDPs: 0 Tests: 52	X		X			X		X			X		X	
Sample description	All	NDPs: 0 Tests: 52	X		X			X		X			X		X	
Total Organic Carbon	All	NDPs: 0 Tests: 52	X		X			X		X			X		X	
TPH CWG GC (S)	All	NDPs: 0 Tests: 52	X		X			X		X			X		X	
VOC MS (S)	All	NDPs: 0 Tests: 52		X		X			X		X			X		X

CERTIFICATE OF ANALYSIS

SDG:	201216-93	**Client Reference:**	P18-669	**Report Number:**	584015
Location:	Llanwern	**Order Number:**	108281	**Superseded Report:**	

Sample Descriptions

Grain Sizes

very fine	<0.063mm	fine	0.063mm - 0.1mm	medium	0.1mm - 2mm	coarse	2mm - 10mm	very coarse	>10mm

Lab Sample No(s)	Customer Sample Ref.	Depth (m)	Colour	Description	Inclusions	Inclusions 2
23443672	4A Comp -1	0.00 - 0.00	Dark Brown	Sandy Loam	Vegetation	Stones
23443677	4A Comp -2	0.00 - 0.00	Dark Brown	Sandy Loam	Stones	None
23443682	4A Comp -3	0.00 - 0.00	Dark Brown	Sandy Clay Loam	Stones	None
23443686	4A Comp -4	0.00 - 0.00	Dark Brown	Sandy Loam	Vegetation	Stones
23443692	4A Comp -5	0.00 - 0.00	Dark Brown	Sandy Loam	Stones	None
23443697	4A Comp -6	0.00 - 0.00	Dark Brown	Sandy Clay Loam	Stones	Vegetation
23443706	4A Comp -7	0.00 - 0.00	Dark Brown	Sandy Clay Loam	Stones	None
23443738	4A Comp -8	0.00 - 0.00	Dark Brown	Loamy Sand	Vegetation	Stones
23443748	4A Comp -9	0.00 - 0.00	Dark Brown	Sandy Clay Loam	Stones	None
23443757	4A Comp -10	0.00 - 0.00	Dark Brown	Sandy Loam	Stones	None
23443767	4A Comp -11	0.00 - 0.00	Dark Brown	Loamy Sand	Vegetation	Stones
23443778	4A Comp -12	0.00 - 0.00	Dark Brown	Sandy Clay Loam	Stones	None
23443783	4A Comp -13	0.00 - 0.00	Dark Brown	Sandy Loam	Stones	None
23443787	4A Comp -14	0.00 - 0.00	Dark Brown	Sandy Clay Loam	Stones	Vegetation
23443791	4A Comp -15	0.00 - 0.00	Dark Brown	Sandy Clay Loam	Stones	Vegetation
23443796	4A Comp -16	0.00 - 0.00	Dark Brown	Stone/Soil	Vegetation	Stones
23443807	4A Comp -17	0.00 - 0.00	Black	Sandy Loam	Stones	None
23443818	4A Comp -18	0.00 - 0.00	Dark Brown	Sandy Loam	Stones	Vegetation
23443824	4A Comp -19	0.00 - 0.00	Dark Brown	Loamy Sand	Vegetation	Stones
23443829	4A Comp -20	0.00 - 0.00	Black	Sandy Loam	Stones	Vegetation
23443833	4A Comp -21	0.00 - 0.00	Dark Brown	Sandy Loam	Stones	None
23443841	4A Comp -22	0.00 - 0.00	Dark Brown	Sandy Clay Loam	Stones	None
23443847	4A Comp -23	0.00 - 0.00	Dark Brown	Sandy Loam	Vegetation	Stones
23443854	4A Comp -24	0.00 - 0.00	Dark Brown	Loamy Sand	Vegetation	Stones
23443860	4A Comp -25	0.00 - 0.00	Dark Brown	Silty Clay Loam	Stones	None
23443867	4A Comp -26	0.00 - 0.00	Dark Brown	Sandy Loam	Stones	Vegetation
23443873	4A Comp -27	0.00 - 0.00	Dark Brown	Sandy Clay Loam	Stones	Vegetation
23443886	4A Comp -28	0.00 - 0.00	Dark Brown	Sandy Clay Loam	Stones	Vegetation
23443893	4A Comp -29	0.00 - 0.00	Dark Brown	Sandy Clay Loam	Stones	None
23443897	4A Comp -30	0.00 - 0.00	Dark Brown	Sandy Loam	Stones	None
23443903	4A Comp -31	0.00 - 0.00	Dark Brown	Sandy Clay Loam	Stones	Vegetation
23443908	4A Comp -32	0.00 - 0.00	Dark Brown	Sandy Clay Loam	Stones	Vegetation
23443913	4A Comp -33	0.00 - 0.00	Dark Brown	Sandy Clay Loam	Stones	Vegetation
23443919	4A Comp -34	0.00 - 0.00	Dark Brown	Sandy Clay Loam	Stones	Vegetation
23443926	4A Comp -35	0.00 - 0.00	Dark Brown	Loamy Sand	Vegetation	Stones
23443933	4A Comp -36	0.00 - 0.00	Dark Brown	Loamy Sand	Vegetation	Stones
23443944	4A Comp -37	0.00 - 0.00	Dark Brown	Stone/Soil	Vegetation	Stones
23443961	4A Comp -38	0.00 - 0.00	Dark Brown	Sandy Loam	Vegetation	Stones
23443967	4A Comp -39	0.00 - 0.00	Dark Brown	Sandy Clay Loam	Stones	Vegetation

CERTIFICATE OF ANALYSIS

SDG:	201216-93	**Client Reference:**	P18-669	**Report Number:**	584015
Location:	Llanwern	**Order Number:**	108281	**Superseded Report:**	

			Colour	Description	Inclusions	Inclusions 2
23443973	4A Comp -40	0.00 - 0.00	Dark Brown	Loamy Sand	Vegetation	Stones
23443648	2BN2-8	0.00 - 0.00	Dark Brown	Sandy Clay Loam	Stones	Vegetation
23443730	2BN2-9	0.00 - 0.00	Dark Brown	Sandy Clay Loam	Stones	None
23443814	2BN2-10	0.00 - 0.00	Black	Sandy Loam	Stones	None
23443880	2BN2-11	0.00 - 0.00	Black	Sandy Loam	Stones	Vegetation
23443952	2BN2-29	0.00 - 0.00	Dark Brown	Loamy Sand	Stones	Vegetation
23443977	2BN2-30	0.00 - 0.00	Dark Brown	Sandy Clay Loam	Stones	Vegetation
23443986	2BN2-31	0.00 - 0.00	Black	Sandy Loam	Stones	None
23443995	2BN2-32	0.00 - 0.00	Black	Sandy Loam	Stones	None
23444000	2BN2-33	0.00 - 0.00	Dark Brown	Loamy Sand	None	Stones
23443655	2BN2-34	0.00 - 0.00	Black	Sandy Loam	Stones	None
23443659	2BN2-35	0.00 - 0.00	Black	Sandy Loam	Stones	Vegetation
23443664	2BN2-36	0.00 - 0.00	Black	Sandy Loam	Vegetation	Stones

These descriptions are only intended to act as a cross check if sample identities are questioned, and to provide a log of sample matrices with respect to MCERTS validation. They are not intended as full geological descriptions.

We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally ocurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample.

Other coarse granular materials such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

Validated

CERTIFICATE OF ANALYSIS

SDG:	201216-93	**Client Reference:**	P18-669	**Report Number:**	584015
Location:	Llanwern	**Order Number:**	108281	**Superseded Report:**	

Results Legend	
#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	4A Comp -1	4A Comp -2	4A Comp -3	4A Comp -4	4A Comp -5	4A Comp -6
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	15/12/2020	15/12/2020	15/12/2020	15/12/2020	15/12/2020	15/12/2020
			Sample Time	.	.	.	.	.	.
			Date Received	16/12/2020	16/12/2020	16/12/2020	16/12/2020	16/12/2020	16/12/2020
			SDG Ref	201216-93	201216-93	201216-93	201216-93	201216-93	201216-93
			Lab Sample No.(s)	23443672	23443677	23443682	23443686	23443692	23443697
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		13	15	12	11	13	9.2
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	<12 M	<12 M	<12 M	<12 M	<12 M
Phenol	<0.01 mg/kg	TM062 (S)		0.0342 M	0.0117 M	0.0114 M	0.0224 M	0.0342 M	0.044 M
Cresols	<0.01 mg/kg	TM062 (S)		0.0114 M	<0.01 M	<0.01 M	<0.01 M	0.0114 M	0.011 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		0.0456 M	<0.035 M	<0.035 M	<0.035 M	0.0456 M	0.055 M
Soil Organic Matter (SOM)	<0.35 %	TM132		25.9 #	14.1 #	14 #	16.5 #	15.5 #	16.4 #
pH	1 pH Units	TM133		10.7 M	10.1 M	9.13 M	11.1 M	9.78 M	10.7 M
Cyanide, Total	<1 mg/kg	TM153		<1 M	<1 M	<1 M	1.11 M	<1 M	<1 M
Arsenic	<0.6 mg/kg	TM181		<6 M	12.3 M	8.78 M	17.4 M	18.4 M	16.4 M
Cadmium	<0.02 mg/kg	TM181		<0.2 M	<0.2 M	0.0908 M	0.0768 M	0.146 M	<0.2 M
Chromium	<0.9 mg/kg	TM181		150 M	109 M	56.5 M	97.9 M	149 M	218 M
Copper	<1.4 mg/kg	TM181		28.8 M	45.7 M	18 M	23.1 M	16.2 M	25.8 M
Iron	<1000 mg/kg	TM181		79800 #	98900 #	34900 #	56300 #	54800 #	75000 #
Lead	<0.7 mg/kg	TM181		39.6 M	66 M	21.5 M	65.3 M	36.5 M	56.9 M
Manganese	<0.13 mg/kg	TM181		9550 M	7740 M	4150 M	11400 M	7200 M	24000 M
Mercury	<0.14 mg/kg	TM181		<1.4 M	<1.4 M	<0.14 M	<0.14 M	<0.14 M	<1.4 M
Nickel	<0.2 mg/kg	TM181		20.7 M	75.3 M	18.7 M	20.2 M	18.4 M	23.2 M
Selenium	<1 mg/kg	TM181		<10 #	<10 #	1.11 #	3.66 #	3.03 #	<10 #
Vanadium	<0.2 mg/kg	TM181		214 #	173 #	79.8 #	154 #	170 #	377 #
Zinc	<1.9 mg/kg	TM181		159 M	222 M	95.5 M	273 M	113 M	195 M

Validated

CERTIFICATE OF ANALYSIS

SDG:	201216-93	**Client Reference:**	P18-669	**Report Number:**	584015
Location:	Llanwern	**Order Number:**	108281	**Superseded Report:**	

Results Legend	
#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	4A Comp -7	4A Comp -8	4A Comp -9	4A Comp -10	4A Comp -11	4A Comp -12
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	15/12/2020	15/12/2020	15/12/2020	15/12/2020	15/12/2020	15/12/2020
			Sample Time	.	.	.	.	.	.
			Date Received	16/12/2020	16/12/2020	16/12/2020	16/12/2020	16/12/2020	16/12/2020
			SDG Ref	201216-93	201216-93	201216-93	201216-93	201216-93	201216-93
			Lab Sample No.(s)	23443706	23443738	23443748	23443757	23443767	23443778
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		17	16	13	15	11	16
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	<12 M	<12 M	<12 M	<12 M	<12 M
Phenol	<0.01 mg/kg	TM062 (S)		0.0242 M	0.0119 M	0.0115 M	0.0118 M	0.0113 M	<0.01 M
Cresols	<0.01 mg/kg	TM062 (S)		0.0121 M	<0.01 M	<0.01 M	<0.01 M	0.0113 M	<0.01 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M
Soil Organic Matter (SOM)	<0.35 %	TM132		17.1 #	29.8 #	<0.35 #	13.4 #	11.8 #	8.15 #
pH	1 pH Units	TM133		9.34 M	10.7 M	8.95 M	11 M	11 M	8.91 M
Cyanide, Total	<1 mg/kg	TM153		<1 M	<1 M	<1 M	1.79 M	1.73 M	<1 M
Arsenic	<0.6 mg/kg	TM181		11.8 M	<6 M	9.74 M	<6 M	10.5 M	11.5 M
Cadmium	<0.02 mg/kg	TM181		0.469 M	<0.2 M	0.678 M	<0.2 M	1.03 M	1.27 M
Chromium	<0.9 mg/kg	TM181		164 M	364 M	39.3 M	195 M	221 M	247 M
Copper	<1.4 mg/kg	TM181		24.8 M	22 M	17.1 M	33 M	26.5 M	38.8 M
Iron	<1000 mg/kg	TM181		57900 #	87600 #	52400 #	82100 #	89500 #	58200 #
Lead	<0.7 mg/kg	TM181		49.5 M	45.2 M	34.4 M	62.5 M	187 M	63.4 M
Manganese	<0.13 mg/kg	TM181		9850 M	20400 M	4580 M	13300 M	11500 M	6870 M
Mercury	<0.14 mg/kg	TM181		<1.4 M	<1.4 M	<0.14 M	<1.4 M	<1.4 M	<1.4 M
Nickel	<0.2 mg/kg	TM181		27.6 M	15.2 M	17.7 M	20.4 M	29 M	28.3 M
Selenium	<1 mg/kg	TM181		<10 #	<10 #	1.71 #	<10 #	<10 #	<10 #
Vanadium	<0.2 mg/kg	TM181		154 #	498 #	107 #	327 #	207 #	144 #
Zinc	<1.9 mg/kg	TM181		134 M	225 M	133 M	228 M	729 M	201 M

Validated

CERTIFICATE OF ANALYSIS

SDG:	201216-93	**Client Reference:**	P18-669	**Report Number:**	584015
Location:	Llanwern	**Order Number:**	108281	**Superseded Report:**	

Results Legend	
#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	4A Comp -13	4A Comp -14	4A Comp -15	4A Comp -16	4A Comp -17	4A Comp -18
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	15/12/2020	15/12/2020	15/12/2020	15/12/2020	15/12/2020	15/12/2020
			Sample Time	.	.	.	.	.	.
			Date Received	16/12/2020	16/12/2020	16/12/2020	16/12/2020	16/12/2020	16/12/2020
			SDG Ref	201216-93	201216-93	201216-93	201216-93	201216-93	201216-93
			Lab Sample No.(s)	23443783	23443787	23443791	23443796	23443807	23443818
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		13	9.8	7.6	15	8.6	9
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	<12 M	<12 M	<12 #	<12 M	<12 M
Phenol	<0.01 mg/kg	TM062 (S)		0.0232 M	<0.01 M	0.0217 M	0.0117 #	0.0547 M	<0.01 M
Cresols	<0.01 mg/kg	TM062 (S)		0.0116 M	<0.01 M	<0.01 M	0.0117 #	0.0109 M	<0.01 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	0.0888 M	0.0325 M	<0.015 #	0.0219 M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	0.0888 M	0.0542 M	<0.035 #	0.0875 M	<0.035 M
Soil Organic Matter (SOM)	<0.35 %	TM132		36.7 #	7.57 #	19.8 #	19.8 #	12.3 #	2.33 #
pH	1 pH Units	TM133		10.6 M	8.27 M	10.6 M	10 #	10.4 M	9 M
Cyanide, Total	<1 mg/kg	TM153		<1 M	<1 M	<1 M	<1 #	<1 M	<1 M
Arsenic	<0.6 mg/kg	TM181		7.95 M	11.2 M	9.91 M	8.95 #	6.76 M	7.27 M
Cadmium	<0.02 mg/kg	TM181		0.553 M	<0.02 M	0.991 M	<0.2 #	0.15 M	0.0474 M
Chromium	<0.9 mg/kg	TM181		152 M	107 M	113 M	177 #	237 M	11.3 M
Copper	<1.4 mg/kg	TM181		22.9 M	23.6 M	25.3 M	19.4 #	14.8 M	15.2 M
Iron	<1000 mg/kg	TM181		55900 #	44100 #	73900 #	121000 #	64600 #	33400 #
Lead	<0.7 mg/kg	TM181		65.9 M	26.5 M	56.2 M	63.9 #	28.1 M	31.5 M
Manganese	<0.13 mg/kg	TM181		10400 M	5610 M	8350 M	14700 #	20400 M	2660 M
Mercury	<0.14 mg/kg	TM181		<1.4 M	<0.14 M	<0.14 M	<1.4 #	<0.14 M	<0.14 M
Nickel	<0.2 mg/kg	TM181		24.2 M	23.2 M	20.5 M	16.7 #	11.5 M	17.6 M
Selenium	<1 mg/kg	TM181		<10 #	1.85 #	2.55 #	<10 #	8.15 #	1.24 #
Vanadium	<0.2 mg/kg	TM181		175 #	115 #	200 #	200 #	332 #	49 #
Zinc	<1.9 mg/kg	TM181		203 M	104 M	208 M	218 #	118 M	73.6 M

Validated

CERTIFICATE OF ANALYSIS

SDG:	201216-93	**Client Reference:**	P18-669	**Report Number:**	584015
Location:	Llanwern	**Order Number:**	108281	**Superseded Report:**	

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	4A Comp -19	4A Comp -20	4A Comp -21	4A Comp -22	4A Comp -23	4A Comp -24
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	15/12/2020	15/12/2020	15/12/2020	15/12/2020	15/12/2020	15/12/2020
			Sample Time	.	.	.	.	.	.
			Date Received	16/12/2020	16/12/2020	16/12/2020	16/12/2020	16/12/2020	16/12/2020
			SDG Ref	201216-93	201216-93	201216-93	201216-93	201216-93	201216-93
			Lab Sample No.(s)	23443824	23443829	23443833	23443841	23443847	23443854
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		13	13	44	13	15	14
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	<12 M	<12 M	<12 M	<12 M	<12 M
Phenol	<0.01 mg/kg	TM062 (S)		0.0115 M	0.023 M	0.036 M	0.0344 M	<0.01 M	0.0234 M
Cresols	<0.01 mg/kg	TM062 (S)		0.0115 M	0.0115 M	0.018 M	<0.01 M	<0.01 M	<0.01 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M
Soil Organic Matter (SOM)	<0.35 %	TM132		19.8 #	17 #	1.29 #	21.6 #	13.4 #	20.9 #
pH	1 pH Units	TM133		9.14 M	9.44 M	10.5 M	10.5 M	9.42 M	11.3 M
Cyanide, Total	<1 mg/kg	TM153		<1 M	<1 M	<1 M	<1 M	<1 M	<1 M
Arsenic	<0.6 mg/kg	TM181		13.1 M	8.81 M	14.4 M	8.41 M	10.7 M	10.1 M
Cadmium	<0.02 mg/kg	TM181		0.393 M	<0.02 M	<0.2 M	<0.02 M	<0.02 M	<0.02 M
Chromium	<0.9 mg/kg	TM181		75.2 M	90.2 M	196 M	64 M	68.7 M	146 M
Copper	<1.4 mg/kg	TM181		30.1 M	24.3 M	31.8 M	20.7 M	20.5 M	26.9 M
Iron	<1000 mg/kg	TM181		54100 #	76000 #	112000 #	53800 #	94700 #	95400 #
Lead	<0.7 mg/kg	TM181		60.7 M	43 M	48.1 M	60 M	33.6 M	73.4 M
Manganese	<0.13 mg/kg	TM181		4590 M	7640 M	14500 M	6750 M	6540 M	10500 M
Mercury	<0.14 mg/kg	TM181		<1.4 M	<0.14 M	<1.4 M	<0.14 M	<0.14 M	<0.14 M
Nickel	<0.2 mg/kg	TM181		25.7 M	25.9 M	21.4 M	14.6 M	22.8 M	18.9 M
Selenium	<1 mg/kg	TM181		<10 #	2.64 #	<10 #	<1 #	<1 #	2.11 #
Vanadium	<0.2 mg/kg	TM181		99.9 #	141 #	465 #	146 #	138 #	240 #
Zinc	<1.9 mg/kg	TM181		237 M	156 M	159 M	193 M	117 M	421 M

Validated

CERTIFICATE OF ANALYSIS

SDG:	201216-93	**Client Reference:**	P18-669	**Report Number:**	584015
Location:	Llanwern	**Order Number:**	108281	**Superseded Report:**	

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	4A Comp -25	4A Comp -26	4A Comp -27	4A Comp -28	4A Comp -29	4A Comp -30
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	15/12/2020	15/12/2020	15/12/2020	15/12/2020	15/12/2020	15/12/2020
			Sample Time	.	.	.	.	.	.
			Date Received	16/12/2020	16/12/2020	16/12/2020	16/12/2020	16/12/2020	16/12/2020
			SDG Ref	201216-93	201216-93	201216-93	201216-93	201216-93	201216-93
			Lab Sample No.(s)	23443860	23443867	23443873	23443886	23443893	23443897
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		10	16	9.5	13	14	12
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	<12 M	<12 M	<12 M	47.9 M	<12 M
Phenol	<0.01 mg/kg	TM062 (S)		0.0444 M	0.0238 M	0.0222 M	0.0115 M	0.0234 M	0.0114 M
Cresols	<0.01 mg/kg	TM062 (S)		0.0111 M	<0.01 M	0.0111 M	0.0115 M	<0.01 M	0.0114 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		0.0555 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M
Soil Organic Matter (SOM)	<0.35 %	TM132		13.1 #	25.7 #	1.81 #	30.7 #	17.4 #	14.6 #
pH	1 pH Units	TM133		10.1 M	10.8 M	9.8 M	10.8 M	10.4 M	11 M
Cyanide, Total	<1 mg/kg	TM153		<1 M	<1 M	<1 M	<1 M	<1 M	<1 M
Arsenic	<0.6 mg/kg	TM181		9.6 M	8.1 M	11.4 M	13.4 M	13.4 M	9.98 M
Cadmium	<0.02 mg/kg	TM181		0.146 M	<0.02 M	0.349 M	<0.2 M	1 M	0.457 M
Chromium	<0.9 mg/kg	TM181		85.4 M	199 M	71.5 M	206 M	128 M	192 M
Copper	<1.4 mg/kg	TM181		18.5 M	20.9 M	21.6 M	27.4 M	23 M	23.8 M
Iron	<1000 mg/kg	TM181		45200 #	81900 #	69700 #	81000 #	53000 #	64800 #
Lead	<0.7 mg/kg	TM181		44.2 M	46.3 M	53.3 M	44.6 M	88.7 M	61.6 M
Manganese	<0.13 mg/kg	TM181		7490 M	11500 M	4960 M	11700 M	7170 M	14600 M
Mercury	<0.14 mg/kg	TM181		<0.14 M	<0.14 M	<0.14 M	<1.4 M	<0.14 M	<1.4 M
Nickel	<0.2 mg/kg	TM181		17.5 M	18.1 M	20.8 M	19.1 M	25.4 M	27.8 M
Selenium	<1 mg/kg	TM181		2.07 #	5.16 #	<1 #	<10 #	3.08 #	<10 #
Vanadium	<0.2 mg/kg	TM181		186 #	240 #	110 #	301 #	185 #	281 #
Zinc	<1.9 mg/kg	TM181		175 M	172 M	171 M	177 M	173 M	238 M

Validated

CERTIFICATE OF ANALYSIS

SDG:	201216-93	**Client Reference:**	P18-669	**Report Number:**	584015
Location:	Llanwern	**Order Number:**	108281	**Superseded Report:**	

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	4A Comp -31	4A Comp -32	4A Comp -33	4A Comp -34	4A Comp -35	4A Comp -36
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	15/12/2020	15/12/2020	15/12/2020	15/12/2020	15/12/2020	15/12/2020
			Sample Time	.	.	.	.	.	.
			Date Received	16/12/2020	16/12/2020	16/12/2020	16/12/2020	16/12/2020	16/12/2020
			SDG Ref	201216-93	201216-93	201216-93	201216-93	201216-93	201216-93
			Lab Sample No.(s)	23443903	23443908	23443913	23443919	23443926	23443933
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		7	16	12	11	11	20
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	<12 M	<12 M	<12 M	<12 M	<12 M
Phenol	<0.01 mg/kg	TM062 (S)		0.043 M	<0.01 M	0.0228 M	<0.01 M	0.0112 M	0.0126 M
Cresols	<0.01 mg/kg	TM062 (S)		0.0108 M	<0.01 M	0.0114 M	<0.01 M	0.0112 M	0.0126 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M	0.0456 M	<0.015 M	<0.015 M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		0.0538 M	<0.035 M	0.0798 M	<0.035 M	<0.035 M	<0.035 M
Soil Organic Matter (SOM)	<0.35 %	TM132		5.26 #	16.4 #	1.39 #	9.28 #	13.8 #	12.9 #
pH	1 pH Units	TM133		10.6 M	9.1 M	10.6 M	8.25 M	9.67 M	10.6 M
Cyanide, Total	<1 mg/kg	TM153		<1 M	<1 M	1.12 M	<1 M	<1 M	1.06 M
Arsenic	<0.6 mg/kg	TM181		8.91 M	11.9 M	17.1 M	11.6 M	7.08 M	6.37 M
Cadmium	<0.02 mg/kg	TM181		1.32 M	0.184 M	10.1 M	<0.02 M	0.258 M	0.223 M
Chromium	<0.9 mg/kg	TM181		250 M	108 M	195 M	51.1 M	160 M	236 M
Copper	<1.4 mg/kg	TM181		19.4 M	26.7 M	59.1 M	29.4 M	21.7 M	22.5 M
Iron	<1000 mg/kg	TM181		67700 #	51600 #	98700 #	39700 #	63900 #	86500 #
Lead	<0.7 mg/kg	TM181		155 M	64.4 M	206 M	37 M	64.3 M	57.7 M
Manganese	<0.13 mg/kg	TM181		14100 M	5880 M	8550 M	2610 M	9890 M	15900 M
Mercury	<0.14 mg/kg	TM181		<0.14 M	<0.14 M	<1.4 M	<0.14 M	<1.4 M	<1.4 M
Nickel	<0.2 mg/kg	TM181		17.4 M	23.6 M	24.6 M	30.5 M	22.6 M	17.6 M
Selenium	<1 mg/kg	TM181		5.89 #	<1 #	<10 #	1.24 #	<10 #	<10 #
Vanadium	<0.2 mg/kg	TM181		152 #	159 #	219 #	84 #	195 #	424 #
Zinc	<1.9 mg/kg	TM181		710 M	214 M	938 M	117 M	216 M	195 M

Validated

CERTIFICATE OF ANALYSIS

SDG:	201216-93	**Client Reference:**	P18-669	**Report Number:**	584015
Location:	Llanwern	**Order Number:**	108281	**Superseded Report:**	

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	4A Comp -37	4A Comp -38	4A Comp -39	4A Comp -40	2BN2-8	2BN2-9
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	15/12/2020	15/12/2020	15/12/2020	15/12/2020	14/12/2020	14/12/2020
			Sample Time	.	.	.	.	.	.
			Date Received	16/12/2020	16/12/2020	16/12/2020	16/12/2020	16/12/2020	16/12/2020
			SDG Ref	201216-93	201216-93	201216-93	201216-93	201216-93	201216-93
			Lab Sample No.(s)	23443944	23443961	23443967	23443973	23443648	23443730
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		7.8	10	10	13	7.8	13
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 #	<12 M	<12 M	<12 M	<12 M	<12 M
Phenol	<0.01 mg/kg	TM062 (S)		0.0108 #	<0.01 M	0.0111 M	<0.01 M	0.0108 M	<0.01 M
Cresols	<0.01 mg/kg	TM062 (S)		0.0108 #	<0.01 M	<0.01 M	<0.01 M	0.0217 M	<0.01 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 #	<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 #	<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M
Soil Organic Matter (SOM)	<0.35 %	TM132		27.1 #	3.43 #	4.34 #	22.2 #	6.09 #	21.4 #
pH	1 pH Units	TM133		10.8 #	8.96 M	9.54 M	9.64 M	11.9 M	11.3 M
Cyanide, Total	<1 mg/kg	TM153		<1 #	<1 M	<1 M	1.19 M	<1 M	<1 M
Arsenic	<0.6 mg/kg	TM181		8.85 #	9.43 M	17.5 M	9.59 M	7.78 M	6.9 M
Cadmium	<0.02 mg/kg	TM181		<0.2 #	<0.2 M	0.0879 M	<0.2 M	0.0431 M	0.328 M
Chromium	<0.9 mg/kg	TM181		176 #	41.1 M	244 M	236 M	235 M	285 M
Copper	<1.4 mg/kg	TM181		20.1 #	23.9 M	15 M	21.4 M	14.2 M	22.9 M
Iron	<1000 mg/kg	TM181		62100 #	50800 #	75100 #	72600 #	93800 #	85100 #
Lead	<0.7 mg/kg	TM181		46.4 #	31.2 M	40.4 M	39.4 M	61.4 M	66.7 M
Manganese	<0.13 mg/kg	TM181		7980 #	4910 M	14300 M	11800 M	19400 M	17100 M
Mercury	<0.14 mg/kg	TM181		<1.4 #	<1.4 M	<0.14 M	<1.4 M	<0.14 M	<1.4 M
Nickel	<0.2 mg/kg	TM181		18.7 #	24.5 M	12.7 M	23.5 M	9.6 M	13.1 M
Selenium	<1 mg/kg	TM181		<10 #	<10 #	5.68 #	<10 #	6.4 #	<10 #
Vanadium	<0.2 mg/kg	TM181		159 #	101 #	202 #	226 #	345 #	301 #
Zinc	<1.9 mg/kg	TM181		184 #	110 M	155 M	162 M	219 M	230 M
Asbestos Quantification - Gravimetric - %	<0.001 %	TM304				<0.001 #			
Asbestos Quantification - PCOM Evaluation - %	<0.001 %	TM304				<0.001 #			
Additional Asbestos Components (Using TM048)		TM304				None #			
Analysts Comments		TM304				N/A			
Asbestos Quantification - Total - %	<0.001 %	TM304				0.0012 #			

Validated

CERTIFICATE OF ANALYSIS

SDG:	201216-93	**Client Reference:**	P18-669	**Report Number:**	584015
Location:	Llanwern	**Order Number:**	108281	**Superseded Report:**	

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	2BN2-10	2BN2-11	2BN2-29	2BN2-30	2BN2-31	2BN2-32
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	14/12/2020	14/12/2020	14/12/2020	14/12/2020	14/12/2020	14/12/2020
			Sample Time	.	.	.	.	.	.
			Date Received	16/12/2020	16/12/2020	16/12/2020	16/12/2020	16/12/2020	16/12/2020
			SDG Ref	201216-93	201216-93	201216-93	201216-93	201216-93	201216-93
			Lab Sample No.(s)	23443814	23443880	23443952	23443977	23443986	23443995
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		13	15	6.1	8.4	16	15
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	<12 M	<12 M	<12 M	<12 M	<12 M
Phenol	<0.01 mg/kg	TM062 (S)		0.0228 M	0.0117 M	0.0106 M	0.0109 M	0.0119 M	0.0118 M
Cresols	<0.01 mg/kg	TM062 (S)		0.0114 M	<0.01 M	0.0106 M	0.0109 M	<0.01 M	<0.01 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M
Soil Organic Matter (SOM)	<0.35 %	TM132		42.6 #	29.1 #	1.62 #	24.3 #	25.5 #	22.8 #
pH	1 pH Units	TM133		11.5 M	11.5 M	12 M	11.7 M	11.6 M	11.6 M
Cyanide, Total	<1 mg/kg	TM153		<1 M	<1 M	<1 M	1.2 M	<1 M	<1 M
Arsenic	<0.6 mg/kg	TM181		10.9 M	<6 M	10.2 M	6.37 M	7.54 M	10.8 M
Cadmium	<0.02 mg/kg	TM181		0.166 M	0.609 M	<0.2 M	0.774 M	0.337 M	0.593 M
Chromium	<0.9 mg/kg	TM181		183 M	328 M	522 M	312 M	131 M	175 M
Copper	<1.4 mg/kg	TM181		17.2 M	19.7 M	18.2 M	23.6 M	16 M	26.3 M
Iron	<1000 mg/kg	TM181		103000 #	96300 #	128000 #	98900 #	75600 #	74900 #
Lead	<0.7 mg/kg	TM181		161 M	129 M	51.3 M	92.3 M	80.8 M	123 M
Manganese	<0.13 mg/kg	TM181		16200 M	17900 M	25600 M	18700 M	9630 M	11200 M
Mercury	<0.14 mg/kg	TM181		<0.14 M	<1.4 M	<1.4 M	<1.4 M	<0.14 M	<1.4 M
Nickel	<0.2 mg/kg	TM181		16.2 M	11.5 M	11.6 M	15.1 M	18.2 M	20.1 M
Selenium	<1 mg/kg	TM181		5.03 #	<10 #	<10 #	<10 #	3.29 #	<10 #
Vanadium	<0.2 mg/kg	TM181		294 #	349 #	521 #	331 #	178 #	218 #
Zinc	<1.9 mg/kg	TM181		751 M	507 M	186 M	322 M	254 M	431 M

CERTIFICATE OF ANALYSIS

SDG:	201216-93	**Client Reference:**	P18-669	**Report Number:**	584015
Location:	Llanwern	**Order Number:**	108281	**Superseded Report:**	

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	2BN2-33	2BN2-34	2BN2-35	2BN2-36		
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00		
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)		
			Date Sampled	14/12/2020	14/12/2020	14/12/2020	14/12/2020		
			Sample Time	.	.	.	.		
			Date Received	16/12/2020	16/12/2020	16/12/2020	16/12/2020		
			SDG Ref	201216-93	201216-93	201216-93	201216-93		
			Lab Sample No.(s)	23444000	23443655	23443659	23443664		
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		11	14	13	12		
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	<12 M	<12 M	<12 M		
Phenol	<0.01 mg/kg	TM062 (S)		0.0226 M	0.0348 M	<0.01 M	<0.01 M		
Cresols	<0.01 mg/kg	TM062 (S)		0.0226 M	0.0116 M	<0.01 M	<0.01 M		
Xylenols	<0.015 mg/kg	TM062 (S)		0.0339 M	<0.015 M	<0.015 M	<0.015 M		
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		0.0791 M	0.0464 M	<0.035 M	<0.035 M		
Soil Organic Matter (SOM)	<0.35 %	TM132		21.9 #	24.7 #	49.7 #	33.8 #		
pH	1 pH Units	TM133		11.1 M	11.6 M	11.7 M	11.8 M		
Cyanide, Total	<1 mg/kg	TM153		1.46 M	<1 M	<1 M	<1 M		
Arsenic	<0.6 mg/kg	TM181		<6 M	<6 M	10.7 M	<6 M		
Cadmium	<0.02 mg/kg	TM181		0.731 M	1.09 M	0.344 M	0.261 M		
Chromium	<0.9 mg/kg	TM181		350 M	259 M	392 M	313 M		
Copper	<1.4 mg/kg	TM181		28 M	26.3 M	27.1 M	21.5 M		
Iron	<1000 mg/kg	TM181		134000 #	109000 #	105000 #	86700 #		
Lead	<0.7 mg/kg	TM181		193 M	217 M	141 M	96.8 M		
Manganese	<0.13 mg/kg	TM181		20100 M	14700 M	21500 M	18300 M		
Mercury	<0.14 mg/kg	TM181		<1.4 M	<1.4 M	<1.4 M	<1.4 M		
Nickel	<0.2 mg/kg	TM181		16.8 M	17.3 M	15.7 M	11.5 M		
Selenium	<1 mg/kg	TM181		<10 #	<10 #	<10 #	<10 #		
Vanadium	<0.2 mg/kg	TM181		418 #	270 #	503 #	342 #		
Zinc	<1.9 mg/kg	TM181		722 M	729 M	515 M	526 M		

Validated

CERTIFICATE OF ANALYSIS

SDG:	201216-93	**Client Reference:**	P18-669	**Report Number:**	584015
Location:	Llanwern	**Order Number:**	108281	**Superseded Report:**	

PAH by GCMS

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	4A Comp -1	4A Comp -2	4A Comp -3	4A Comp -4	4A Comp -5	4A Comp -6
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	15/12/2020	15/12/2020	15/12/2020	15/12/2020	15/12/2020	15/12/2020
			Sample Time	.	.	.	.	.	.
			Date Received	16/12/2020	16/12/2020	16/12/2020	16/12/2020	16/12/2020	16/12/2020
			SDG Ref	201216-93	201216-93	201216-93	201216-93	201216-93	201216-93
			Lab Sample No.(s)	23443672	23443677	23443682	23443686	23443692	23443697
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		82.3	80.1	84.3	83.7	77.4	84.8
Acenaphthene-d10 % recovery**	%	TM218		80.3	83.6	84.2	84.4	77.2	82.5
Phenanthrene-d10 % recovery**	%	TM218		88	86.1	87.2	87.1	80.9	86.6
Chrysene-d12 % recovery**	%	TM218		82.4	85.8	85.8	85.2	81.9	87.7
Perylene-d12 % recovery**	%	TM218		88.6	77	83.9	84.2	79.2	85.9
Naphthalene	<9 µg/kg	TM218		2590 M	965 M	1390 M	2140 M	2840 M	2170 M
Acenaphthylene	<12 µg/kg	TM218		1000 M	350 M	759 M	633 M	799 M	646 M
Acenaphthene	<8 µg/kg	TM218		130 M	55.9 M	72.5 M	118 M	137 M	116 M
Fluorene	<10 µg/kg	TM218		805 M	365 M	585 M	545 M	959 M	586 M
Phenanthrene	<15 µg/kg	TM218		4840 M	2370 M	3860 M	3530 M	5280 M	2860 M
Anthracene	<16 µg/kg	TM218		1680 M	719 M	1080 M	1090 M	1430 M	1030 M
Fluoranthene	<17 µg/kg	TM218		8600 M	3760 M	6740 M	5710 M	8300 M	5220 M
Pyrene	<15 µg/kg	TM218		6260 M	2660 M	4540 M	4130 M	5760 M	4040 M
Benz(a)anthracene	<14 µg/kg	TM218		3860 M	1570 M	2780 M	2240 M	3370 M	2380 M
Chrysene	<10 µg/kg	TM218		3270 M	1340 M	2290 M	2280 M	2800 M	2020 M
Benzo(b)fluoranthene	<15 µg/kg	TM218		3610 M	1910 M	3540 M	3080 M	4640 M	3220 M
Benzo(k)fluoranthene	<14 µg/kg	TM218		1400 M	609 M	1240 M	1100 M	1420 M	1110 M
Benzo(a)pyrene	<15 µg/kg	TM218		3270 M	1190 M	2220 M	1990 M	2940 M	2020 M
Indeno(1,2,3-cd)pyrene	<18 µg/kg	TM218		2760 M	807 M	1800 M	1720 M	2100 M	1560 M
Dibenzo(a,h)anthracene	<23 µg/kg	TM218		583 M	167 M	388 M	310 M	410 M	309 M
Benzo(g,h,i)perylene	<24 µg/kg	TM218		2310 M	661 M	1520 M	1340 M	1720 M	1350 M
PAH, Total Detected USEPA 16	<118 µg/kg	TM218		47000	19500	34800	32000	44900	30600

Validated

CERTIFICATE OF ANALYSIS

SDG: 201216-93 **Client Reference:** P18-669 **Report Number:** 584015
Location: Llanwern **Order Number:** 108281 **Superseded Report:**

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	4A Comp -7	4A Comp -8	4A Comp -9	4A Comp -10	4A Comp -11	4A Comp -12
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	15/12/2020	15/12/2020	15/12/2020	15/12/2020	15/12/2020	15/12/2020
			Sample Time	.	.	.	.	.	.
			Date Received	16/12/2020	16/12/2020	16/12/2020	16/12/2020	16/12/2020	16/12/2020
			SDG Ref	201216-93	201216-93	201216-93	201216-93	201216-93	201216-93
			Lab Sample No.(s)	23443706	23443738	23443748	23443757	23443767	23443778
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		77.7	84.6	78.5	77.5	76.3	78.4
Acenaphthene-d10 % recovery**	%	TM218		81.4	83.7	78.8	77.9	83.6	83
Phenanthrene-d10 % recovery**	%	TM218		87.9	86.3	80.9	80.9	87.9	85.2
Chrysene-d12 % recovery**	%	TM218		82.3	87.5	84.4	83.6	87.4	75.9
Perylene-d12 % recovery**	%	TM218		84.9	87.2	85.6	83.1	71.5	74.6
Naphthalene	<9 µg/kg	TM218		795 M	1620 M	1280 M	1410 M	2280 M	674 M
Acenaphthylene	<12 µg/kg	TM218		313 M	650 M	313 M	447 M	1690 M	335 M
Acenaphthene	<8 µg/kg	TM218		50.7 M	97.4 M	61.6 M	79.1 M	220 M	54 M
Fluorene	<10 µg/kg	TM218		263 M	474 M	265 M	412 M	1060 M	269 M
Phenanthrene	<15 µg/kg	TM218		1430 M	2710 M	1600 M	2710 M	7860 M	1540 M
Anthracene	<16 µg/kg	TM218		523 M	884 M	410 M	772 M	3090 M	483 M
Fluoranthene	<17 µg/kg	TM218		2720 M	4890 M	2810 M	4660 M	18800 M	2680 M
Pyrene	<15 µg/kg	TM218		1940 M	3830 M	2140 M	3550 M	14000 M	1950 M
Benz(a)anthracene	<14 µg/kg	TM218		1060 M	2200 M	1400 M	2160 M	8190 M	1170 M
Chrysene	<10 µg/kg	TM218		1060 M	2040 M	1180 M	1750 M	7570 M	1170 M
Benzo(b)fluoranthene	<15 µg/kg	TM218		1470 M	3010 M	1970 M	2760 M	9290 M	1780 M
Benzo(k)fluoranthene	<14 µg/kg	TM218		474 M	1060 M	690 M	984 M	3050 M	637 M
Benzo(a)pyrene	<15 µg/kg	TM218		901 M	1860 M	1310 M	1770 M	5510 M	1090 M
Indeno(1,2,3-cd)pyrene	<18 µg/kg	TM218		709 M	1560 M	986 M	1360 M	4520 M	906 M
Dibenzo(a,h)anthracene	<23 µg/kg	TM218		79.7 M	322 M	195 M	259 M	901 M	109 M
Benzo(g,h,i)perylene	<24 µg/kg	TM218		468 M	1350 M	799 M	1080 M	3650 M	601 M
PAH, Total Detected USEPA 16	<118 µg/kg	TM218		14200	28600	17400	26200	91700	15400

Validated

CERTIFICATE OF ANALYSIS

SDG:	201216-93	**Client Reference:**	P18-669	**Report Number:**	584015
Location:	Llanwern	**Order Number:**	108281	**Superseded Report:**	

PAH by GCMS

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	4A Comp -13	4A Comp -14	4A Comp -15	4A Comp -16	4A Comp -17	4A Comp -18
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	15/12/2020	15/12/2020	15/12/2020	15/12/2020	15/12/2020	15/12/2020
			Sample Time	.	.	.	.	.	.
			Date Received	16/12/2020	16/12/2020	16/12/2020	16/12/2020	16/12/2020	16/12/2020
			SDG Ref	201216-93	201216-93	201216-93	201216-93	201216-93	201216-93
			Lab Sample No.(s)	23443783	23443787	23443791	23443796	23443807	23443818
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		78.9	82.5	78.9	79.6	79.7	79.9
Acenaphthene-d10 % recovery**	%	TM218		84.3	82.1	86.9	87.3	80	80.3
Phenanthrene-d10 % recovery**	%	TM218		89.7	88.5	94.1	92.7	88.5	82.2
Chrysene-d12 % recovery**	%	TM218		80.6	87.3	92.2	94.1	77.4	88
Perylene-d12 % recovery**	%	TM218		76.6	90.7	79.6	77	80.8	88.7
Naphthalene	<9 µg/kg	TM218		2050 M	427 M	1790 M	3830 #	2780 M	68.8 M
Acenaphthylene	<12 µg/kg	TM218		1480 M	184 M	1310 M	1740 #	1560 M	24.3 M
Acenaphthene	<8 µg/kg	TM218		159 M	29.7 M	171 M	191 #	162 M	<8 M
Fluorene	<10 µg/kg	TM218		1140 M	96.1 M	2850 M	1250 #	1110 M	20.8 M
Phenanthrene	<15 µg/kg	TM218		7430 M	493 M	14300 M	8360 #	7690 M	201 M
Anthracene	<16 µg/kg	TM218		3690 M	135 M	3930 M	3210 #	2100 M	44.4 M
Fluoranthene	<17 µg/kg	TM218		15600 M	903 M	14100 M	16500 #	14100 M	327 M
Pyrene	<15 µg/kg	TM218		11500 M	668 M	9310 M	12100 #	10200 M	244 M
Benz(a)anthracene	<14 µg/kg	TM218		6930 M	431 M	4860 M	7550 #	5980 M	168 M
Chrysene	<10 µg/kg	TM218		6640 M	364 M	4360 M	7270 #	5190 M	168 M
Benzo(b)fluoranthene	<15 µg/kg	TM218		8770 M	646 M	5040 M	9200 #	5040 M	211 M
Benzo(k)fluoranthene	<14 µg/kg	TM218		2960 M	211 M	1690 M	3260 #	2390 M	76.7 M
Benzo(a)pyrene	<15 µg/kg	TM218		5420 M	416 M	3110 M	5430 #	5100 M	137 M
Indeno(1,2,3-cd)pyrene	<18 µg/kg	TM218		4270 M	349 M	2480 M	4870 #	4300 M	92.9 M
Dibenzo(a,h)anthracene	<23 µg/kg	TM218		722 M	69.8 M	519 M	927 #	971 M	<23 M
Benzo(g,h,i)perylene	<24 µg/kg	TM218		2890 M	291 M	2030 M	4040 #	3520 M	89.4 M
PAH, Total Detected USEPA 16	<118 µg/kg	TM218		81600	5710	71900	89800	72100	1870

Validated

CERTIFICATE OF ANALYSIS

SDG:	201216-93	**Client Reference:**	P18-669	**Report Number:**	584015
Location:	Llanwern	**Order Number:**	108281	**Superseded Report:**	

PAH by GCMS

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	4A Comp -19	4A Comp -20	4A Comp -21	4A Comp -22	4A Comp -23	4A Comp -24
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	15/12/2020	15/12/2020	15/12/2020	15/12/2020	15/12/2020	15/12/2020
			Sample Time	.	.	.	.	.	.
			Date Received	16/12/2020	16/12/2020	16/12/2020	16/12/2020	16/12/2020	16/12/2020
			SDG Ref	201216-93	201216-93	201216-93	201216-93	201216-93	201216-93
			Lab Sample No.(s)	23443824	23443829	23443833	23443841	23443847	23443854
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		83.5	86.5	76.8	85.4	76.8	83.2
Acenaphthene-d10 % recovery**	%	TM218		86.3	85	79.7	84.4	78	82.2
Phenanthrene-d10 % recovery**	%	TM218		87	86.8	84.1	86.8	80.8	90.5
Chrysene-d12 % recovery**	%	TM218		85.4	89.5	87.2	89.6	84.6	80.4
Perylene-d12 % recovery**	%	TM218		79.9	88.9	82.1	87.4	84.7	78.4
Naphthalene	<9 µg/kg	TM218		1330 M	1800 M	3530 M	1360 M	1390 M	3400 M
Acenaphthylene	<12 µg/kg	TM218		561 M	647 M	1080 M	499 M	434 M	967 M
Acenaphthene	<8 µg/kg	TM218		72.1 M	88.3 M	169 M	89.2 M	85.7 M	163 M
Fluorene	<10 µg/kg	TM218		418 M	574 M	1050 M	499 M	392 M	895 M
Phenanthrene	<15 µg/kg	TM218		2530 M	3160 M	7230 M	2700 M	2210 M	5570 M
Anthracene	<16 µg/kg	TM218		920 M	1740 M	2120 M	799 M	755 M	1830 M
Fluoranthene	<17 µg/kg	TM218		5430 M	5650 M	12400 M	3830 M	3960 M	9320 M
Pyrene	<15 µg/kg	TM218		3980 M	4070 M	9000 M	2660 M	2830 M	6800 M
Benz(a)anthracene	<14 µg/kg	TM218		2550 M	2650 M	5910 M	1550 M	1840 M	3620 M
Chrysene	<10 µg/kg	TM218		2470 M	2090 M	5490 M	1350 M	1540 M	3190 M
Benzo(b)fluoranthene	<15 µg/kg	TM218		3470 M	3480 M	7820 M	2000 M	2400 M	3540 M
Benzo(k)fluoranthene	<14 µg/kg	TM218		1140 M	1240 M	2940 M	707 M	862 M	1320 M
Benzo(a)pyrene	<15 µg/kg	TM218		2130 M	2230 M	4780 M	1240 M	1490 M	2910 M
Indeno(1,2,3-cd)pyrene	<18 µg/kg	TM218		1680 M	1740 M	3430 M	1040 M	1160 M	2340 M
Dibenzo(a,h)anthracene	<23 µg/kg	TM218		315 M	350 M	713 M	193 M	227 M	480 M
Benzo(g,h,i)perylene	<24 µg/kg	TM218		1400 M	1470 M	2730 M	832 M	892 M	1920 M
PAH, Total Detected USEPA 16	<118 µg/kg	TM218		30400	33000	70400	21300	22500	48300

Validated

CERTIFICATE OF ANALYSIS

SDG:	201216-93	**Client Reference:**	P18-669	**Report Number:**	584015
Location:	Llanwern	**Order Number:**	108281	**Superseded Report:**	

PAH by GCMS

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	4A Comp -25	4A Comp -26	4A Comp -27	4A Comp -28	4A Comp -29	4A Comp -30
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	15/12/2020	15/12/2020	15/12/2020	15/12/2020	15/12/2020	15/12/2020
			Sample Time	.	.	.	.	.	.
			Date Received	16/12/2020	16/12/2020	16/12/2020	16/12/2020	16/12/2020	16/12/2020
			SDG Ref	201216-93	201216-93	201216-93	201216-93	201216-93	201216-93
			Lab Sample No.(s)	23443860	23443867	23443873	23443886	23443893	23443897
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		79.4	75.6	78.8	79.1	79.7	79.2
Acenaphthene-d10 % recovery**	%	TM218		83.8	77.8	82.5	79.4	82.2	82.4
Phenanthrene-d10 % recovery**	%	TM218		86.9	82.3	85.7	81.1	82.1	87.1
Chrysene-d12 % recovery**	%	TM218		86.6	85.9	82.2	79.2	87.6	82.3
Perylene-d12 % recovery**	%	TM218		76.8	83	75.2	82.7	86.7	82.8
Naphthalene	<9 µg/kg	TM218		1640 M	3180 M	1600 M	2490 M	1690 M	1070 M
Acenaphthylene	<12 µg/kg	TM218		522 M	1030 M	552 M	5410 M	498 M	672 M
Acenaphthene	<8 µg/kg	TM218		93.1 M	178 M	86.1 M	386 M	209 M	87.6 M
Fluorene	<10 µg/kg	TM218		614 M	1080 M	547 M	9470 M	540 M	475 M
Phenanthrene	<15 µg/kg	TM218		3130 M	5550 M	2920 M	42600 M	3140 M	4060 M
Anthracene	<16 µg/kg	TM218		929 M	2160 M	841 M	24900 M	911 M	1150 M
Fluoranthene	<17 µg/kg	TM218		4510 M	9970 M	5710 M	42500 M	5030 M	8500 M
Pyrene	<15 µg/kg	TM218		3240 M	7640 M	4150 M	28600 M	3680 M	6210 M
Benz(a)anthracene	<14 µg/kg	TM218		1850 M	4550 M	2430 M	14600 M	2370 M	3340 M
Chrysene	<10 µg/kg	TM218		1610 M	4150 M	1850 M	13700 M	2110 M	3180 M
Benzo(b)fluoranthene	<15 µg/kg	TM218		2210 M	6480 M	3180 M	15900 M	1060 M	4180 M
Benzo(k)fluoranthene	<14 µg/kg	TM218		765 M	2090 M	1060 M	6500 M	1090 M	1560 M
Benzo(a)pyrene	<15 µg/kg	TM218		1380 M	3850 M	1920 M	10800 M	2010 M	2510 M
Indeno(1,2,3-cd)pyrene	<18 µg/kg	TM218		917 M	2860 M	1310 M	8170 M	1470 M	1990 M
Dibenzo(a,h)anthracene	<23 µg/kg	TM218		173 M	548 M	277 M	1770 M	280 M	317 M
Benzo(g,h,i)perylene	<24 µg/kg	TM218		741 M	2240 M	1030 M	6780 M	1200 M	1400 M
PAH, Total Detected USEPA 16	<118 µg/kg	TM218		24300	57500	29500	235000	27300	40700

Validated

CERTIFICATE OF ANALYSIS

SDG:	201216-93	**Client Reference:**	P18-669	**Report Number:**	584015
Location:	Llanwern	**Order Number:**	108281	**Superseded Report:**	

PAH by GCMS

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	4A Comp -31	4A Comp -32	4A Comp -33	4A Comp -34	4A Comp -35	4A Comp -36
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	15/12/2020	15/12/2020	15/12/2020	15/12/2020	15/12/2020	15/12/2020
			Sample Time	.	.	.	.	.	.
			Date Received	16/12/2020	16/12/2020	16/12/2020	16/12/2020	16/12/2020	16/12/2020
			SDG Ref	201216-93	201216-93	201216-93	201216-93	201216-93	201216-93
			Lab Sample No.(s)	23443903	23443908	23443913	23443919	23443926	23443933
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		83.6	80.6	86.6	83.3	74.1	86.7
Acenaphthene-d10 % recovery**	%	TM218		83.3	84.1	84.9	82.9	77	83.4
Phenanthrene-d10 % recovery**	%	TM218		86.4	85.7	89.3	88	79.9	85.2
Chrysene-d12 % recovery**	%	TM218		83.9	82.4	84.6	82.6	80.6	87.4
Perylene-d12 % recovery**	%	TM218		83.2	74.6	84.6	84.7	71.2	88.5
Naphthalene	<9 µg/kg	TM218		2710 M	568 M	2760 M	509 M	1770 M	7870 M
Acenaphthylene	<12 µg/kg	TM218		965 M	194 M	1490 M	351 M	791 M	2620 M
Acenaphthene	<8 µg/kg	TM218		138 M	61.5 M	191 M	48.6 M	89.5 M	267 M
Fluorene	<10 µg/kg	TM218		837 M	185 M	1110 M	346 M	712 M	2150 M
Phenanthrene	<15 µg/kg	TM218		4600 M	1250 M	6950 M	1500 M	5070 M	13500 M
Anthracene	<16 µg/kg	TM218		1540 M	345 M	2420 M	485 M	2370 M	5720 M
Fluoranthene	<17 µg/kg	TM218		7970 M	2040 M	12900 M	1750 M	10400 M	28100 M
Pyrene	<15 µg/kg	TM218		5780 M	1530 M	9520 M	1180 M	7560 M	19700 M
Benz(a)anthracene	<14 µg/kg	TM218		3230 M	1040 M	5410 M	718 M	4320 M	11700 M
Chrysene	<10 µg/kg	TM218		2900 M	804 M	4480 M	672 M	3620 M	9820 M
Benzo(b)fluoranthene	<15 µg/kg	TM218		4110 M	1270 M	7620 M	1030 M	5330 M	15600 M
Benzo(k)fluoranthene	<14 µg/kg	TM218		1590 M	482 M	2380 M	352 M	1820 M	5620 M
Benzo(a)pyrene	<15 µg/kg	TM218		2640 M	822 M	4780 M	636 M	3390 M	10200 M
Indeno(1,2,3-cd)pyrene	<18 µg/kg	TM218		2090 M	584 M	3730 M	537 M	2400 M	8210 M
Dibenzo(a,h)anthracene	<23 µg/kg	TM218		450 M	125 M	761 M	111 M	445 M	1640 M
Benzo(g,h,i)perylene	<24 µg/kg	TM218		1820 M	470 M	3290 M	451 M	1860 M	6880 M
PAH, Total Detected USEPA 16	<118 µg/kg	TM218		43400	11800	69800	10700	51900	150000

Validated

CERTIFICATE OF ANALYSIS

SDG:	201216-93	**Client Reference:**	P18-669	**Report Number:**	584015
Location:	Llanwern	**Order Number:**	108281	**Superseded Report:**	

PAH by GCMS

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	4A Comp -37	4A Comp -38	4A Comp -39	4A Comp -40	2BN2-8	2BN2-9
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	15/12/2020	15/12/2020	15/12/2020	15/12/2020	14/12/2020	14/12/2020
			Sample Time	.	.	.	.	.	.
			Date Received	16/12/2020	16/12/2020	16/12/2020	16/12/2020	16/12/2020	16/12/2020
			SDG Ref	201216-93	201216-93	201216-93	201216-93	201216-93	201216-93
			Lab Sample No.(s)	23443944	23443961	23443967	23443973	23443648	23443730
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		78	79.1	83.3	81	77.6	81.1
Acenaphthene-d10 % recovery**	%	TM218		86.1	80	86.5	82.1	82.9	82
Phenanthrene-d10 % recovery**	%	TM218		92.3	81.8	91.5	85.4	89.5	87
Chrysene-d12 % recovery**	%	TM218		88.6	85.8	106	83.6	104	85.9
Perylene-d12 % recovery**	%	TM218		73.7	83.8	96	74.6	88.2	82.5
Naphthalene	<9 µg/kg	TM218		1990 #	95.2 M	993 M	1770 M	3440 M	2110 M
Acenaphthylene	<12 µg/kg	TM218		1310 #	85.1 M	362 M	613 M	900 M	435 M
Acenaphthene	<8 µg/kg	TM218		147 #	<8 M	44.2 M	94.8 M	169 M	97.1 M
Fluorene	<10 µg/kg	TM218		746 #	35.2 M	260 M	571 M	963 M	454 M
Phenanthrene	<15 µg/kg	TM218		5390 #	291 M	1490 M	3360 M	6520 M	2790 M
Anthracene	<16 µg/kg	TM218		1680 #	86.3 M	508 M	971 M	1770 M	738 M
Fluoranthene	<17 µg/kg	TM218		10900 #	1870 M	3010 M	5680 M	10800 M	3910 M
Pyrene	<15 µg/kg	TM218		8340 #	1360 M	2330 M	4130 M	7970 M	3020 M
Benz(a)anthracene	<14 µg/kg	TM218		5130 #	703 M	1610 M	2540 M	5200 M	1680 M
Chrysene	<10 µg/kg	TM218		4880 #	569 M	1300 M	2200 M	3990 M	1640 M
Benzo(b)fluoranthene	<15 µg/kg	TM218		6390 #	831 M	1910 M	3340 M	6350 M	2230 M
Benzo(k)fluoranthene	<14 µg/kg	TM218		2130 #	334 M	668 M	1160 M	1980 M	817 M
Benzo(a)pyrene	<15 µg/kg	TM218		3870 #	561 M	1260 M	2100 M	3690 M	1400 M
Indeno(1,2,3-cd)pyrene	<18 µg/kg	TM218		3270 #	370 M	841 M	1440 M	2430 M	1120 M
Dibenzo(a,h)anthracene	<23 µg/kg	TM218		684 #	76.7 M	159 M	300 M	538 M	235 M
Benzo(g,h,i)perylene	<24 µg/kg	TM218		2870 #	281 M	688 M	1130 M	2010 M	975 M
PAH, Total Detected USEPA 16	<118 µg/kg	TM218		59700	7550	17400	31400	58700	23600

Validated

CERTIFICATE OF ANALYSIS

SDG:	201216-93	**Client Reference:**	P18-669	**Report Number:**	584015
Location:	Llanwern	**Order Number:**	108281	**Superseded Report:**	

PAH by GCMS

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	2BN2-10	2BN2-11	2BN2-29	2BN2-30	2BN2-31	2BN2-32
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	14/12/2020	14/12/2020	14/12/2020	14/12/2020	14/12/2020	14/12/2020
			Sample Time	.	.	.	.	.	.
			Date Received	16/12/2020	16/12/2020	16/12/2020	16/12/2020	16/12/2020	16/12/2020
			SDG Ref	201216-93	201216-93	201216-93	201216-93	201216-93	201216-93
			Lab Sample No.(s)	23443814	23443880	23443952	23443977	23443986	23443995
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		78.1	84.7	79.4	70.1	79.6	79
Acenaphthene-d10 % recovery**	%	TM218		83.7	85	85.3	71	80.1	80
Phenanthrene-d10 % recovery**	%	TM218		86.4	87.1	93.1	73.8	83.4	84.3
Chrysene-d12 % recovery**	%	TM218		96.3	81.2	89.4	71.9	93.5	94
Perylene-d12 % recovery**	%	TM218		93.4	78.4	75.7	73.4	88	89.3
Naphthalene	<9 µg/kg	TM218		5340 M	1920 M	3700 M	3070 M	2880 M	2120 M
Acenaphthylene	<12 µg/kg	TM218		1770 M	576 M	941 M	1000 M	829 M	563 M
Acenaphthene	<8 µg/kg	TM218		218 M	91.1 M	174 M	172 M	117 M	95.3 M
Fluorene	<10 µg/kg	TM218		1910 M	371 M	814 M	1080 M	820 M	430 M
Phenanthrene	<15 µg/kg	TM218		9860 M	2930 M	5760 M	7920 M	5640 M	3240 M
Anthracene	<16 µg/kg	TM218		3570 M	830 M	2070 M	3190 M	1700 M	1040 M
Fluoranthene	<17 µg/kg	TM218		13100 M	4680 M	10300 M	13100 M	10100 M	5320 M
Pyrene	<15 µg/kg	TM218		9100 M	3310 M	7570 M	8840 M	7260 M	4110 M
Benz(a)anthracene	<14 µg/kg	TM218		5310 M	2100 M	4770 M	5570 M	4540 M	2670 M
Chrysene	<10 µg/kg	TM218		5350 M	2400 M	4960 M	5030 M	4070 M	2670 M
Benzo(b)fluoranthene	<15 µg/kg	TM218		5690 M	3040 M	5360 M	6930 M	5420 M	3130 M
Benzo(k)fluoranthene	<14 µg/kg	TM218		1650 M	1110 M	1830 M	2150 M	1790 M	1100 M
Benzo(a)pyrene	<15 µg/kg	TM218		4230 M	2000 M	3160 M	4260 M	3390 M	2160 M
Indeno(1,2,3-cd)pyrene	<18 µg/kg	TM218		3050 M	1690 M	2590 M	3760 M	2420 M	1600 M
Dibenzo(a,h)anthracene	<23 µg/kg	TM218		658 M	328 M	568 M	726 M	512 M	350 M
Benzo(g,h,i)perylene	<24 µg/kg	TM218		2800 M	1290 M	2110 M	2920 M	2320 M	1510 M
PAH, Total Detected USEPA 16	<118 µg/kg	TM218		73600	28700	56700	69700	53800	32100

CERTIFICATE OF ANALYSIS

SDG:	201216-93	**Client Reference:**	P18-669	**Report Number:**	584015
Location:	Llanwern	**Order Number:**	108281	**Superseded Report:**	

PAH by GCMS

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	2BN2-33	2BN2-34	2BN2-35	2BN2-36		
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00		
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)		
			Date Sampled	14/12/2020	14/12/2020	14/12/2020	14/12/2020		
			Sample Time	.	.	.	.		
			Date Received	16/12/2020	16/12/2020	16/12/2020	16/12/2020		
			SDG Ref	201216-93	201216-93	201216-93	201216-93		
			Lab Sample No.(s)	23444000	23443655	23443659	23443664		
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		85.4	79.2	83.7	79.1		
Acenaphthene-d10 % recovery**	%	TM218		85.9	79.8	82.6	76.5		
Phenanthrene-d10 % recovery**	%	TM218		89	87.1	83.7	80.7		
Chrysene-d12 % recovery**	%	TM218		84.2	73.8	78.7	72.5		
Perylene-d12 % recovery**	%	TM218		87.3	77	75.1	71.1		
Naphthalene	<9 µg/kg	TM218		5410 M	8350 M	2640 M	2830 M		
Acenaphthylene	<12 µg/kg	TM218		1880 M	2150 M	695 M	624 M		
Acenaphthene	<8 µg/kg	TM218		265 M	289 M	134 M	108 M		
Fluorene	<10 µg/kg	TM218		2340 M	2300 M	456 M	440 M		
Phenanthrene	<15 µg/kg	TM218		9540 M	11700 M	4070 M	3990 M		
Anthracene	<16 µg/kg	TM218		2390 M	4400 M	1140 M	966 M		
Fluoranthene	<17 µg/kg	TM218		10900 M	15600 M	6810 M	5980 M		
Pyrene	<15 µg/kg	TM218		7500 M	10400 M	4890 M	4140 M		
Benz(a)anthracene	<14 µg/kg	TM218		4270 M	5760 M	2990 M	2640 M		
Chrysene	<10 µg/kg	TM218		3910 M	5250 M	3330 M	2280 M		
Benzo(b)fluoranthene	<15 µg/kg	TM218		5480 M	3950 M	4170 M	2550 M		
Benzo(k)fluoranthene	<14 µg/kg	TM218		2100 M	1850 M	1540 M	1060 M		
Benzo(a)pyrene	<15 µg/kg	TM218		3630 M	4340 M	2690 M	2400 M		
Indeno(1,2,3-cd)pyrene	<18 µg/kg	TM218		3090 M	3460 M	2140 M	2020 M		
Dibenzo(a,h)anthracene	<23 µg/kg	TM218		662 M	782 M	401 M	454 M		
Benzo(g,h,i)perylene	<24 µg/kg	TM218		2510 M	2850 M	1650 M	1820 M		
PAH, Total Detected USEPA 16	<118 µg/kg	TM218		65900	83400	39700	34300		

Validated

CERTIFICATE OF ANALYSIS

SDG:	201216-93	**Client Reference:**	P18-669	**Report Number:**	584015
Location:	Llanwern	**Order Number:**	108281	**Superseded Report:**	

TPH CWG (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	4A Comp -1	4A Comp -2	4A Comp -3	4A Comp -4	4A Comp -5	4A Comp -6
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	15/12/2020	15/12/2020	15/12/2020	15/12/2020	15/12/2020	15/12/2020
			Sample Time	.	.	.	.	.	.
			Date Received	16/12/2020	16/12/2020	16/12/2020	16/12/2020	16/12/2020	16/12/2020
			SDG Ref	201216-93	201216-93	201216-93	201216-93	201216-93	201216-93
			Lab Sample No.(s)	23443672	23443677	23443682	23443686	23443692	23443697
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		51.8 4 @	37.9 4 @	70 @	48.9 4 @	49.7 4 @	34.2 4 @
Aliphatics >C5-C6	<10 µg/kg	TM089		<10 4 @	<10 4 @	11.4 @	16.8 4 @	<10 4 @	11 4 @
Aliphatics >C6-C8	<10 µg/kg	TM089		25.1 4 @	29.3 4 @	18.2 @	69.4 4 @	38.8 4 @	37.4 4 @
Aliphatics >C8-C10	<10 µg/kg	TM089		30.8 4 @	28.1 4 @	26.2 @	75 4 @	45.6 4 @	44 4 @
Aliphatics >C10-C12	<1000 µg/kg	TM414		<1000	<1000	<1000	<5000	<1000	<1000
Aliphatics >C12-C16	<1000 µg/kg	TM414		2250	<1000	1510	<5000	1600	1520
Aliphatics >C16-C21	<1000 µg/kg	TM414		13700	3290	43100	18800	13300	21400
Aliphatics >C21-C35	<1000 µg/kg	TM414		21300	8560	22400	22600	19700	21000
Aliphatics >C35-C44	<1000 µg/kg	TM414		5640	1810	2230	<5000	3710	2790
Total Aliphatics >C10-C44	<5000 µg/kg	TM414		43300	13900	69300	44400	38600	46800
Total Aliphatics & Aromatics >C10-C44	<10000 µg/kg	TM414		175000	53000	125000	628000	144000	169000
Aromatics >EC5-EC7	<10 µg/kg	TM089		<10 4 @	<10 4 @	<10 @	10.1 4 @	<10 4 @	<10 4 @
Aromatics >EC7-EC8	<10 µg/kg	TM089		<10 4 @	<10 4 @	10.3 @	14.6 4 @	<10 4 @	<10 4 @
Aromatics >EC8-EC10	<10 µg/kg	TM089		20.5 4 @	18.7 4 @	18.2 @	50.4 4 @	30.8 4 @	28.6 4 @
Aromatics > EC10-EC12	<1000 µg/kg	TM414		3290	<1000	1340	5200	3150	2610
Aromatics > EC12-EC16	<1000 µg/kg	TM414		5230	<1000	2190	24400	5100	3400
Aromatics > EC16-EC21	<1000 µg/kg	TM414		31400	8780	12900	202000	27900	27900
Aromatics > EC21-EC35	<1000 µg/kg	TM414		82500	26900	35500	312000	62800	76600
Aromatics >EC35-EC44	<1000 µg/kg	TM414		9730	1890	3650	39500	6310	11800
Aromatics > EC40-EC44	<1000 µg/kg	TM414		1560	<1000	<1000	7160	<1000	2260
Total Aromatics > EC10-EC44	<5000 µg/kg	TM414		132000	39100	55500	584000	105000	122000
Total Aliphatics & Aromatics >C5-C44	<10000 µg/kg	TM414		176000	53100	125000	629000	144000	169000
Total Aliphatics >C5-C10	<50 µg/kg	TM089		55.9 4 @	57.3 4 @	55.9 @	161 4 @	84.4 4 @	92.4 4 @
Total Aromatics >EC5-EC10	<50 µg/kg	TM089		<50 4 @	<50 4 @	<50 @	75 4 @	<50 4 @	<50 4 @
GRO >C5-C10	<20 µg/kg	TM089		55.9 4 @	57.3 4 @	55.9 @	236 4 @	84.4 4 @	92.4 4 @

Validated

CERTIFICATE OF ANALYSIS

SDG:	201216-93	**Client Reference:**	P18-669	**Report Number:**	584015
Location:	Llanwern	**Order Number:**	108281	**Superseded Report:**	

TPH CWG (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	4A Comp -7	4A Comp -8	4A Comp -9	4A Comp -10	4A Comp -11	4A Comp -12
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	15/12/2020	15/12/2020	15/12/2020	15/12/2020	15/12/2020	15/12/2020
			Sample Time	.	.	.	.	.	.
			Date Received	16/12/2020	16/12/2020	16/12/2020	16/12/2020	16/12/2020	16/12/2020
			SDG Ref	201216-93	201216-93	201216-93	201216-93	201216-93	201216-93
			Lab Sample No.(s)	23443706	23443738	23443748	23443757	23443767	23443778
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		49.1 4 @	24.8 4 @	61.7 4 @	36.2 4 @	67.8 4 @	52.7 4 @
Aliphatics >C5-C6	<10 µg/kg	TM089		<10 4 @	<10 4 @	11.5 4 @	17.7 4 @	10.2 4 @	<10 4 @
Aliphatics >C6-C8	<10 µg/kg	TM089		15.7 4 @	36.9 4 @	48.3 4 @	41.3 4 @	33.9 4 @	<10 4 @
Aliphatics >C8-C10	<10 µg/kg	TM089		20.6 4 @	36.9 4 @	47.2 4 @	42.5 4 @	39.6 4 @	<10 4 @
Aliphatics >C10-C12	<1000 µg/kg	TM414		<1000	1160	<1000	<1000	<1000	<1000
Aliphatics >C12-C16	<1000 µg/kg	TM414		2050	3380	<1000	2040	2240	1230
Aliphatics >C16-C21	<1000 µg/kg	TM414		17800	17600	3500	25100	12400	14900
Aliphatics >C21-C35	<1000 µg/kg	TM414		16600	32300	5600	30300	23600	31400
Aliphatics >C35-C44	<1000 µg/kg	TM414		2420	8470	<1000	5520	6950	8160
Total Aliphatics >C10-C44	<5000 µg/kg	TM414		39300	62900	9560	63100	46100	55700
Total Aliphatics & Aromatics >C10-C44	<10000 µg/kg	TM414		117000	434000	76500	357000	267000	103000
Aromatics >EC5-EC7	<10 µg/kg	TM089		<10 4 @	<10 4 @	<10 4 @	<10 4 @	<10 4 @	<10 4 @
Aromatics >EC7-EC8	<10 µg/kg	TM089		<10 4 @	<10 4 @	<10 4 @	<10 4 @	<10 4 @	<10 4 @
Aromatics >EC8-EC10	<10 µg/kg	TM089		13.3 4 @	23.8 4 @	32.2 4 @	28.3 4 @	27.1 4 @	<10 4 @
Aromatics > EC10-EC12	<1000 µg/kg	TM414		2150	5410	2120	2390	3050	<1000
Aromatics > EC12-EC16	<1000 µg/kg	TM414		3650	12000	2540	9530	6610	1170
Aromatics > EC16-EC21	<1000 µg/kg	TM414		21100	108000	17100	98300	50500	8530
Aromatics > EC21-EC35	<1000 µg/kg	TM414		45600	221000	41600	166000	135000	34200
Aromatics >EC35-EC44	<1000 µg/kg	TM414		4710	25300	3640	18200	25400	2660
Aromatics > EC40-EC44	<1000 µg/kg	TM414		<1000	3770	<1000	3250	3870	<1000
Total Aromatics > EC10-EC44	<5000 µg/kg	TM414		77200	371000	67000	294000	221000	47100
Total Aliphatics & Aromatics >C5-C44	<10000 µg/kg	TM414		117000	434000	76700	358000	267000	103000
Total Aliphatics >C5-C10	<50 µg/kg	TM089		<50 4 @	73.8 4 @	107 4 @	101 4 @	83.6 4 @	<50 4 @
Total Aromatics >EC5-EC10	<50 µg/kg	TM089		<50 4 @	<50 4 @	<50 4 @	<50 4 @	<50 4 @	<50 4 @
GRO >C5-C10	<20 µg/kg	TM089		<20 4 @	73.8 4 @	107 4 @	101 4 @	83.6 4 @	<20 4 @

Validated

CERTIFICATE OF ANALYSIS

SDG: 201216-93 **Client Reference:** P18-669 **Report Number:** 584015
Location: Llanwern **Order Number:** 108281 **Superseded Report:**

TPH CWG (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	4A Comp -13	4A Comp -14	4A Comp -15	4A Comp -16	4A Comp -17	4A Comp -18
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	15/12/2020	15/12/2020	15/12/2020	15/12/2020	15/12/2020	15/12/2020
			Sample Time	.	.	.	.	.	.
			Date Received	16/12/2020	16/12/2020	16/12/2020	16/12/2020	16/12/2020	16/12/2020
			SDG Ref	201216-93	201216-93	201216-93	201216-93	201216-93	201216-93
			Lab Sample No.(s)	23443783	23443787	23443791	23443796	23443807	23443818
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		40.2 4 @	53.9 4 @	66.6 4 @	50.9 4 @	43.1 4 @	93.6 @
Aliphatics >C5-C6	<10 µg/kg	TM089		<10 4 @	<10 4 @	17.3 4 @	<10 4 @	<10 4 @	<10 @
Aliphatics >C6-C8	<10 µg/kg	TM089		38.3 4 @	<10 4 @	30.3 4 @	30.4 4 @	14.2 4 @	<10 @
Aliphatics >C8-C10	<10 µg/kg	TM089		44.1 4 @	<10 4 @	30.3 4 @	32.8 4 @	17.5 4 @	<10 @
Aliphatics >C10-C12	<1000 µg/kg	TM414		<1000	<1000	<1000	<1000	<1000	<1000
Aliphatics >C12-C16	<1000 µg/kg	TM414		1540	1640	<1000	2660	2750	<1000
Aliphatics >C16-C21	<1000 µg/kg	TM414		11700	42500	2910	18300	21400	<1000
Aliphatics >C21-C35	<1000 µg/kg	TM414		19600	16300	6800	30700	26900	<1000
Aliphatics >C35-C44	<1000 µg/kg	TM414		4350	1850	<1000	8390	6500	<1000
Total Aliphatics >C10-C44	<5000 µg/kg	TM414		37400	62300	10600	60400	57900	<5000
Total Aliphatics & Aromatics >C10-C44	<10000 µg/kg	TM414		161000	103000	153000	740000	377000	<10000
Aromatics >EC5-EC7	<10 µg/kg	TM089		<10 4 @	<10 4 @	<10 4 @	<10 4 @	<10 4 @	<10 @
Aromatics >EC7-EC8	<10 µg/kg	TM089		<10 4 @	<10 4 @	<10 4 @	<10 4 @	<10 4 @	<10 @
Aromatics >EC8-EC10	<10 µg/kg	TM089		30.2 4 @	<10 4 @	20.6 4 @	22.2 4 @	10.9 4 @	<10 @
Aromatics > EC10-EC12	<1000 µg/kg	TM414		2140	<1000	2530	6610	3660	<1000
Aromatics > EC12-EC16	<1000 µg/kg	TM414		4710	1090	6990	17300	9990	<1000
Aromatics > EC16-EC21	<1000 µg/kg	TM414		30600	8340	52300	188000	80100	1590
Aromatics > EC21-EC35	<1000 µg/kg	TM414		75000	26600	71600	410000	196000	4490
Aromatics >EC35-EC44	<1000 µg/kg	TM414		10800	3610	8650	57600	29100	<1000
Aromatics > EC40-EC44	<1000 µg/kg	TM414		1740	<1000	1720	7250	6170	<1000
Total Aromatics > EC10-EC44	<5000 µg/kg	TM414		123000	40200	142000	679000	319000	7270
Total Aliphatics & Aromatics >C5-C44	<10000 µg/kg	TM414		161000	103000	153000	740000	377000	<10000
Total Aliphatics >C5-C10	<50 µg/kg	TM089		82.4 4 @	<50 4 @	78 4 @	63.2 4 @	<50 4 @	<50 @
Total Aromatics >EC5-EC10	<50 µg/kg	TM089		<50 4 @	<50 4 @	<50 4 @	<50 4 @	<50 4 @	<50 @
GRO >C5-C10	<20 µg/kg	TM089		82.4 4 @	<20 4 @	78 4 @	63.2 4 @	<20 4 @	<20 @

Validated

CERTIFICATE OF ANALYSIS

SDG:	201216-93	**Client Reference:**	P18-669	**Report Number:**	584015
Location:	Llanwern	**Order Number:**	108281	**Superseded Report:**	

TPH CWG (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	4A Comp -19	4A Comp -20	4A Comp -21	4A Comp -22	4A Comp -23	4A Comp -24
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	15/12/2020	15/12/2020	15/12/2020	15/12/2020	15/12/2020	15/12/2020
			Sample Time	.	.	.	.	.	.
			Date Received	16/12/2020	16/12/2020	16/12/2020	16/12/2020	16/12/2020	16/12/2020
			SDG Ref	201216-93	201216-93	201216-93	201216-93	201216-93	201216-93
			Lab Sample No.(s)	23443824	23443829	23443833	23443841	23443847	23443854
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		77.9 @	42.2 4 @	34.6 @	48.8 4 @	81.2 @	45.4 4 @
Aliphatics >C5-C6	<10 µg/kg	TM089		10.4 @	<10 4 @	16.2 @	<10 4 @	<10 @	<10 4 @
Aliphatics >C6-C8	<10 µg/kg	TM089		40.3 @	23 4 @	64.8 @	26.3 4 @	<10 @	33.9 4 @
Aliphatics >C8-C10	<10 µg/kg	TM089		56.4 @	19.6 4 @	72 @	28.6 4 @	<10 @	43.3 4 @
Aliphatics >C10-C12	<1000 µg/kg	TM414		<1000	<1000	<1000	<1000	<1000	<1000
Aliphatics >C12-C16	<1000 µg/kg	TM414		<1000	2080	6180	<1000	<1000	2380
Aliphatics >C16-C21	<1000 µg/kg	TM414		5100	10700	160000	5200	50900	15200
Aliphatics >C21-C35	<1000 µg/kg	TM414		8350	19100	86500	15500	20000	27200
Aliphatics >C35-C44	<1000 µg/kg	TM414		1410	9310	6050	5900	1030	11200
Total Aliphatics >C10-C44	<5000 µg/kg	TM414		15700	41900	259000	27800	72200	56200
Total Aliphatics & Aromatics >C10-C44	<10000 µg/kg	TM414		107000	177000	545000	85100	113000	187000
Aromatics >EC5-EC7	<10 µg/kg	TM089		<10 @	<10 4 @	<10 @	<10 4 @	<10 @	<10 4 @
Aromatics >EC7-EC8	<10 µg/kg	TM089		<10 @	<10 4 @	<10 @	<10 4 @	<10 @	<10 4 @
Aromatics >EC8-EC10	<10 µg/kg	TM089		38 @	12.7 4 @	46.8 @	19.5 4 @	<10 @	28.1 4 @
Aromatics > EC10-EC12	<1000 µg/kg	TM414		1850	2950	5930	1240	1140	3080
Aromatics > EC12-EC16	<1000 µg/kg	TM414		3140	5500	10400	2530	1030	5150
Aromatics > EC16-EC21	<1000 µg/kg	TM414		23500	32600	76100	14000	8840	34400
Aromatics > EC21-EC35	<1000 µg/kg	TM414		55200	81500	168000	36400	26400	79400
Aromatics >EC35-EC44	<1000 µg/kg	TM414		7160	12600	25800	3090	3150	8890
Aromatics > EC40-EC44	<1000 µg/kg	TM414		1200	1190	5300	<1000	<1000	1500
Total Aromatics > EC10-EC44	<5000 µg/kg	TM414		90900	135000	286000	57300	40600	131000
Total Aliphatics & Aromatics >C5-C44	<10000 µg/kg	TM414		107000	177000	546000	85100	113000	187000
Total Aliphatics >C5-C10	<50 µg/kg	TM089		107 @	<50 4 @	153 @	55 4 @	<50 @	77.2 4 @
Total Aromatics >EC5-EC10	<50 µg/kg	TM089		<50 @	<50 4 @	<50 @	<50 4 @	<50 @	<50 4 @
GRO >C5-C10	<20 µg/kg	TM089		107 @	<20 4 @	153 @	55 4 @	<20 @	77.2 4 @

Validated

CERTIFICATE OF ANALYSIS

SDG: 201216-93 **Client Reference:** P18-669 **Report Number:** 584015
Location: Llanwern **Order Number:** 108281 **Superseded Report:**

TPH CWG (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	4A Comp -25	4A Comp -26	4A Comp -27	4A Comp -28	4A Comp -29	4A Comp -30
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	15/12/2020	15/12/2020	15/12/2020	15/12/2020	15/12/2020	15/12/2020
			Sample Time	.	.	.	.	.	.
			Date Received	16/12/2020	16/12/2020	16/12/2020	16/12/2020	16/12/2020	16/12/2020
			SDG Ref	201216-93	201216-93	201216-93	201216-93	201216-93	201216-93
			Lab Sample No.(s)	23443860	23443867	23443873	23443886	23443893	23443897
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		44.8 4 @	70 @	40.5 4 @	24.8 4 @	23 4 @	35.3 4 @
Aliphatics >C5-C6	<10 µg/kg	TM089		<10 4 @	10.7 @	<10 4 @	<10 4 @	<10 4 @	23.9 4 @
Aliphatics >C6-C8	<10 µg/kg	TM089		<10 4 @	41.7 @	<10 4 @	31.1 4 @	21.1 4 @	60.4 4 @
Aliphatics >C8-C10	<10 µg/kg	TM089		<10 4 @	45.2 @	<10 4 @	32.2 4 @	19.9 4 @	63.8 4 @
Aliphatics >C10-C12	<1000 µg/kg	TM414		<1000	<1000	<1000	<1000	<1000	<1000
Aliphatics >C12-C16	<1000 µg/kg	TM414		1470	2460	<1000	1900	<1000	2420
Aliphatics >C16-C21	<1000 µg/kg	TM414		16500	25600	9940	12400	11700	16900
Aliphatics >C21-C35	<1000 µg/kg	TM414		18900	28900	9460	24500	17000	25300
Aliphatics >C35-C44	<1000 µg/kg	TM414		2880	5510	<1000	4330	3190	8510
Total Aliphatics >C10-C44	<5000 µg/kg	TM414		39900	62600	20900	43200	33000	53500
Total Aliphatics & Aromatics >C10-C44	<10000 µg/kg	TM414		147000	276000	75900	247000	122000	151000
Aromatics >EC5-EC7	<10 µg/kg	TM089		<10 4 @	<10 @	<10 4 @	<10 4 @	<10 4 @	<10 4 @
Aromatics >EC7-EC8	<10 µg/kg	TM089		<10 4 @	<10 @	<10 4 @	<10 4 @	<10 4 @	13.7 4 @
Aromatics >EC8-EC10	<10 µg/kg	TM089		<10 4 @	29.8 @	<10 4 @	21.9 4 @	12.9 4 @	43.3 4 @
Aromatics > EC10-EC12	<1000 µg/kg	TM414		2810	6700	1460	3540	5570	1920
Aromatics > EC12-EC16	<1000 µg/kg	TM414		5260	9120	2380	7580	5390	3930
Aromatics > EC16-EC21	<1000 µg/kg	TM414		29300	56600	13700	56900	23400	22100
Aromatics > EC21-EC35	<1000 µg/kg	TM414		62200	124000	33700	121000	49300	63500
Aromatics >EC35-EC44	<1000 µg/kg	TM414		7940	17500	3730	14900	5750	5720
Aromatics > EC40-EC44	<1000 µg/kg	TM414		1440	3250	<1000	2340	<1000	<1000
Total Aromatics > EC10-EC44	<5000 µg/kg	TM414		108000	213000	55000	204000	89400	97100
Total Aliphatics & Aromatics >C5-C44	<10000 µg/kg	TM414		147000	276000	75900	247000	122000	151000
Total Aliphatics >C5-C10	<50 µg/kg	TM089		<50 4 @	97.6 @	<50 4 @	63.3 4 @	<50 4 @	148 4 @
Total Aromatics >EC5-EC10	<50 µg/kg	TM089		<50 4 @	<50 @	<50 4 @	<50 4 @	<50 4 @	57 4 @
GRO >C5-C10	<20 µg/kg	TM089		<20 4 @	97.6 @	<20 4 @	63.3 4 @	<20 4 @	205 4 @

Validated

CERTIFICATE OF ANALYSIS

SDG: 201216-93 **Client Reference:** P18-669 **Report Number:** 584015
Location: Llanwern **Order Number:** 108281 **Superseded Report:**

TPH CWG (S)

Results Legend	
#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	4A Comp -31	4A Comp -32	4A Comp -33	4A Comp -34	4A Comp -35	4A Comp -36
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	15/12/2020	15/12/2020	15/12/2020	15/12/2020	15/12/2020	15/12/2020
			Sample Time	.	.	.	.	.	.
			Date Received	16/12/2020	16/12/2020	16/12/2020	16/12/2020	16/12/2020	16/12/2020
			SDG Ref	201216-93	201216-93	201216-93	201216-93	201216-93	201216-93
			Lab Sample No.(s)	23443903	23443908	23443913	23443919	23443926	23443933
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		32.5 4 @	53.5 4 @	54.1 4 @	107 4 @	70.8 @	41.8 4 @
Aliphatics >C5-C6	<10 µg/kg	TM089		22.6 4 @	16.7 4 @	20.5 4 @	<10 4 @	35.8 @	<10 4 @
Aliphatics >C6-C8	<10 µg/kg	TM089		35.5 4 @	25 4 @	33.1 4 @	<10 4 @	53.8 @	18.9 4 @
Aliphatics >C8-C10	<10 µg/kg	TM089		32.3 4 @	25 4 @	27.4 4 @	<10 4 @	44.8 @	23.9 4 @
Aliphatics >C10-C12	<1000 µg/kg	TM414		<1000	<1000	<1000	<1000	<1000	1270
Aliphatics >C12-C16	<1000 µg/kg	TM414		1830	<1000	4450	2220	<1000	3160
Aliphatics >C16-C21	<1000 µg/kg	TM414		11500	9870	19100	53700	9140	14400
Aliphatics >C21-C35	<1000 µg/kg	TM414		17900	19400	81700	25400	14700	36900
Aliphatics >C35-C44	<1000 µg/kg	TM414		3800	3250	68700	4200	2460	19300
Total Aliphatics >C10-C44	<5000 µg/kg	TM414		35600	33300	175000	85700	27100	75000
Total Aliphatics & Aromatics >C10-C44	<10000 µg/kg	TM414		177000	64900	638000	241000	224000	421000
Aromatics >EC5-EC7	<10 µg/kg	TM089		<10 4 @	<10 4 @	<10 4 @	<10 4 @	<10 @	<10 4 @
Aromatics >EC7-EC8	<10 µg/kg	TM089		<10 4 @	<10 4 @	<10 4 @	<10 4 @	<10 @	<10 4 @
Aromatics >EC8-EC10	<10 µg/kg	TM089		21.5 4 @	16.7 4 @	18.2 4 @	<10 4 @	30.2 @	16.4 4 @
Aromatics > EC10-EC12	<1000 µg/kg	TM414		2290	<1000	4480	1290	2320	6720
Aromatics > EC12-EC16	<1000 µg/kg	TM414		4930	<1000	13400	3050	3760	9110
Aromatics > EC16-EC21	<1000 µg/kg	TM414		38400	5180	134000	36800	48400	72000
Aromatics > EC21-EC35	<1000 µg/kg	TM414		83900	24300	277000	98500	122000	215000
Aromatics >EC35-EC44	<1000 µg/kg	TM414		12200	1310	33800	15400	20600	43100
Aromatics > EC40-EC44	<1000 µg/kg	TM414		1820	<1000	4430	1950	3070	7220
Total Aromatics > EC10-EC44	<5000 µg/kg	TM414		142000	31600	463000	155000	197000	346000
Total Aliphatics & Aromatics >C5-C44	<10000 µg/kg	TM414		177000	64900	638000	241000	224000	421000
Total Aliphatics >C5-C10	<50 µg/kg	TM089		90.4 4 @	66.6 4 @	80.9 4 @	<50 4 @	134 @	<50 4 @
Total Aromatics >EC5-EC10	<50 µg/kg	TM089		<50 4 @	<50 4 @	<50 4 @	<50 4 @	<50 @	<50 4 @
GRO >C5-C10	<20 µg/kg	TM089		90.4 4 @	66.6 4 @	80.9 4 @	<20 4 @	134 @	<20 4 @

Validated

CERTIFICATE OF ANALYSIS

SDG:	201216-93	**Client Reference:**	P18-669	**Report Number:**	584015
Location:	Llanwern	**Order Number:**	108281	**Superseded Report:**	

TPH CWG (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	4A Comp -37	4A Comp -38	4A Comp -39	4A Comp -40	2BN2-8	2BN2-9
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	15/12/2020	15/12/2020	15/12/2020	15/12/2020	14/12/2020	14/12/2020
			Sample Time	.	.	.	.	.	.
			Date Received	16/12/2020	16/12/2020	16/12/2020	16/12/2020	16/12/2020	16/12/2020
			SDG Ref	201216-93	201216-93	201216-93	201216-93	201216-93	201216-93
			Lab Sample No.(s)	23443944	23443961	23443967	23443973	23443648	23443730
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		38.9 4 @	80.8 @	54 4 @	38.6 4 @	33.9 4 @	22.4 4 @
Aliphatics >C5-C6	<10 µg/kg	TM089		16.3 4 @	<10 @	12.2 4 @	<10 4 @	29.3 4 @	<10 4 @
Aliphatics >C6-C8	<10 µg/kg	TM089		20.6 4 @	<10 @	50 4 @	19.4 4 @	39 4 @	38.8 4 @
Aliphatics >C8-C10	<10 µg/kg	TM089		15.2 4 @	<10 @	62.2 4 @	20.5 4 @	32.5 4 @	41 4 @
Aliphatics >C10-C12	<1000 µg/kg	TM414		<1000	<1000	<1000	<1000	<1000	<1000
Aliphatics >C12-C16	<1000 µg/kg	TM414		1960	<1000	<1000	2850	4090	2690
Aliphatics >C16-C21	<1000 µg/kg	TM414		16600	1620	3300	17000	35600	21700
Aliphatics >C21-C35	<1000 µg/kg	TM414		21200	5690	8760	29800	32700	25600
Aliphatics >C35-C44	<1000 µg/kg	TM414		3800	<1000	1570	8270	7030	4980
Total Aliphatics >C10-C44	<5000 µg/kg	TM414		43700	8080	14000	58500	79600	55200
Total Aliphatics & Aromatics >C10-C44	<10000 µg/kg	TM414		262000	21300	65500	224000	183000	159000
Aromatics >EC5-EC7	<10 µg/kg	TM089		<10 4 @	<10 @	<10 4 @	<10 4 @	<10 4 @	<10 4 @
Aromatics >EC7-EC8	<10 µg/kg	TM089		<10 4 @	<10 @	<10 4 @	<10 4 @	<10 4 @	<10 4 @
Aromatics >EC8-EC10	<10 µg/kg	TM089		<10 4 @	<10 @	41.1 4 @	13.7 4 @	21.7 4 @	27.4 4 @
Aromatics > EC10-EC12	<1000 µg/kg	TM414		2920	<1000	1590	3830	2970	3450
Aromatics > EC12-EC16	<1000 µg/kg	TM414		5100	<1000	1530	6900	4160	5620
Aromatics > EC16-EC21	<1000 µg/kg	TM414		39800	2000	12600	40200	25000	28400
Aromatics > EC21-EC35	<1000 µg/kg	TM414		143000	9630	32800	99600	65500	60800
Aromatics >EC35-EC44	<1000 µg/kg	TM414		27000	<1000	2920	14700	5960	5870
Aromatics > EC40-EC44	<1000 µg/kg	TM414		3720	<1000	<1000	2170	<1000	<1000
Total Aromatics > EC10-EC44	<5000 µg/kg	TM414		218000	13200	51500	165000	104000	104000
Total Aliphatics & Aromatics >C5-C44	<10000 µg/kg	TM414		262000	21300	65600	224000	183000	160000
Total Aliphatics >C5-C10	<50 µg/kg	TM089		52 4 @	<50 @	124 4 @	<50 4 @	101 4 @	79.8 4 @
Total Aromatics >EC5-EC10	<50 µg/kg	TM089		<50 4 @	<50 @	<50 4 @	<50 4 @	<50 4 @	<50 4 @
GRO >C5-C10	<20 µg/kg	TM089		52 4 @	<20 @	124 4 @	<20 4 @	101 4 @	79.8 4 @

Validated

CERTIFICATE OF ANALYSIS

SDG: 201216-93 **Client Reference:** P18-669 **Report Number:** 584015
Location: Llanwern **Order Number:** 108281 **Superseded Report:**

TPH CWG (S)

Results Legend

#	ISO17025 accredited.
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aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	2BN2-10	2BN2-11	2BN2-29	2BN2-30	2BN2-31	2BN2-32
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	14/12/2020	14/12/2020	14/12/2020	14/12/2020	14/12/2020	14/12/2020
			Sample Time	.	.	.	.	.	.
			Date Received	16/12/2020	16/12/2020	16/12/2020	16/12/2020	16/12/2020	16/12/2020
			SDG Ref	201216-93	201216-93	201216-93	201216-93	201216-93	201216-93
			Lab Sample No.(s)	23443814	23443880	23443952	23443977	23443986	23443995
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		44.3 4 @	20.9 4 @	30.1 4 @	31.4 4 @	33.9 4 @	23.7 4 @
Aliphatics >C5-C6	<10 µg/kg	TM089		20.5 4 @	30.4 4 @	27.7 4 @	26.2 4 @	16.7 4 @	10.6 4 @
Aliphatics >C6-C8	<10 µg/kg	TM089		94.6 4 @	43.3 4 @	40.4 4 @	33.9 4 @	64.3 4 @	48.4 4 @
Aliphatics >C8-C10	<10 µg/kg	TM089		103 4 @	31.6 4 @	34 4 @	28.4 4 @	80.9 4 @	61.4 4 @
Aliphatics >C10-C12	<1000 µg/kg	TM414		<1000	<1000	<1000	<1000	<1000	<1000
Aliphatics >C12-C16	<1000 µg/kg	TM414		4010	2840	5460	7130	4190	5580
Aliphatics >C16-C21	<1000 µg/kg	TM414		25500	14100	30100	45500	31800	36800
Aliphatics >C21-C35	<1000 µg/kg	TM414		57100	32900	35100	45100	35800	40000
Aliphatics >C35-C44	<1000 µg/kg	TM414		13500	6390	12600	11500	6150	8850
Total Aliphatics >C10-C44	<5000 µg/kg	TM414		100000	56600	84000	110000	78200	91700
Total Aliphatics & Aromatics >C10-C44	<10000 µg/kg	TM414		396000	395000	238000	281000	199000	228000
Aromatics >EC5-EC7	<10 µg/kg	TM089		20.5 4 @	<10 4 @	<10 4 @	<10 4 @	<10 4 @	<10 4 @
Aromatics >EC7-EC8	<10 µg/kg	TM089		22.8 4 @	<10 4 @	<10 4 @	<10 4 @	11.9 4 @	<10 4 @
Aromatics >EC8-EC10	<10 µg/kg	TM089		68.4 4 @	21.1 4 @	22.3 4 @	18.6 4 @	53.6 4 @	41.3 4 @
Aromatics > EC10-EC12	<1000 µg/kg	TM414		10200	3050	4370	5670	4010	3800
Aromatics > EC12-EC16	<1000 µg/kg	TM414		15500	8150	7990	7450	5760	6230
Aromatics > EC16-EC21	<1000 µg/kg	TM414		83400	73600	43900	40100	31000	34500
Aromatics > EC21-EC35	<1000 µg/kg	TM414		161000	237000	87600	104000	72500	82500
Aromatics >EC35-EC44	<1000 µg/kg	TM414		25400	16500	10500	13300	7540	9510
Aromatics > EC40-EC44	<1000 µg/kg	TM414		2770	1940	1520	1990	<1000	1460
Total Aromatics > EC10-EC44	<5000 µg/kg	TM414		296000	338000	154000	171000	121000	137000
Total Aliphatics & Aromatics >C5-C44	<10000 µg/kg	TM414		397000	395000	238000	281000	199000	228000
Total Aliphatics >C5-C10	<50 µg/kg	TM089		218 4 @	105 4 @	102 4 @	88.5 4 @	162 4 @	120 4 @
Total Aromatics >EC5-EC10	<50 µg/kg	TM089		112 4 @	<50 4 @	<50 4 @	<50 4 @	65.5 4 @	<50 4 @
GRO >C5-C10	<20 µg/kg	TM089		329 4 @	105 4 @	102 4 @	88.5 4 @	227 4 @	120 4 @

CERTIFICATE OF ANALYSIS

SDG:	201216-93	**Client Reference:**	P18-669	**Report Number:**	584015
Location:	Llanwern	**Order Number:**	108281	**Superseded Report:**	

TPH CWG (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	2BN2-33	2BN2-34	2BN2-35	2BN2-36		
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00		
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)		
			Date Sampled	14/12/2020	14/12/2020	14/12/2020	14/12/2020		
			Sample Time	.	.	.	.		
			Date Received	16/12/2020	16/12/2020	16/12/2020	16/12/2020		
			SDG Ref	201216-93	201216-93	201216-93	201216-93		
			Lab Sample No.(s)	23444000	23443655	23443659	23443664		
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		45.8 4 @	47.1 4 @	28.6 4 @	15.9 4 @		
Aliphatics >C5-C6	<10 µg/kg	TM089		<10 4 @	27.8 4 @	22 4 @	11.4 4 @		
Aliphatics >C6-C8	<10 µg/kg	TM089		11.3 4 @	131 4 @	73.1 4 @	45.6 4 @		
Aliphatics >C8-C10	<10 µg/kg	TM089		13.6 4 @	135 4 @	67.3 4 @	46.7 4 @		
Aliphatics >C10-C12	<1000 µg/kg	TM414		<1000	<1000	<1000	1050		
Aliphatics >C12-C16	<1000 µg/kg	TM414		5440	4500	4620	6400		
Aliphatics >C16-C21	<1000 µg/kg	TM414		27000	26400	23400	23700		
Aliphatics >C21-C35	<1000 µg/kg	TM414		55800	49300	43000	43100		
Aliphatics >C35-C44	<1000 µg/kg	TM414		21500	17400	9290	12900		
Total Aliphatics >C10-C44	<5000 µg/kg	TM414		111000	98200	80800	87200		
Total Aliphatics & Aromatics >C10-C44	<10000 µg/kg	TM414		480000	808000	253000	294000		
Aromatics >EC5-EC7	<10 µg/kg	TM089		<10 4 @	26.7 4 @	13.9 4 @	<10 4 @		
Aromatics >EC7-EC8	<10 µg/kg	TM089		<10 4 @	31.3 4 @	24.4 4 @	10.3 4 @		
Aromatics >EC8-EC10	<10 µg/kg	TM089		<10 4 @	89.3 4 @	45.2 4 @	30.8 4 @		
Aromatics > EC10-EC12	<1000 µg/kg	TM414		9850	20300	4110	3730		
Aromatics > EC12-EC16	<1000 µg/kg	TM414		15100	40700	7600	6870		
Aromatics > EC16-EC21	<1000 µg/kg	TM414		93000	233000	42000	44500		
Aromatics > EC21-EC35	<1000 µg/kg	TM414		212000	372000	108000	136000		
Aromatics >EC35-EC44	<1000 µg/kg	TM414		38700	43900	11000	16000		
Aromatics > EC40-EC44	<1000 µg/kg	TM414		5540	7610	1370	2370		
Total Aromatics > EC10-EC44	<5000 µg/kg	TM414		369000	710000	173000	207000		
Total Aliphatics & Aromatics >C5-C44	<10000 µg/kg	TM414		480000	808000	254000	294000		
Total Aliphatics >C5-C10	<50 µg/kg	TM089		<50 4 @	293 4 @	162 4 @	104 4 @		
Total Aromatics >EC5-EC10	<50 µg/kg	TM089		<50 4 @	147 4 @	83.5 4 @	<50 4 @		
GRO >C5-C10	<20 µg/kg	TM089		<20 4 @	441 4 @	246 4 @	104 4 @		

Validated

CERTIFICATE OF ANALYSIS

SDG:	201216-93	**Client Reference:**	P18-669	**Report Number:**	584015
Location:	Llanwern	**Order Number:**	108281	**Superseded Report:**	

VOC MS (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	4A Comp -1	4A Comp -2	4A Comp -3	4A Comp -4	4A Comp -5	4A Comp -6
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	15/12/2020	15/12/2020	15/12/2020	15/12/2020	15/12/2020	15/12/2020
			Sample Time	.	.	.	.	.	.
			Date Received	16/12/2020	16/12/2020	16/12/2020	16/12/2020	16/12/2020	16/12/2020
			SDG Ref	201216-93	201216-93	201216-93	201216-93	201216-93	201216-93
			Lab Sample No.(s)	23443672	23443677	23443682	23443686	23443692	23443697
			AGS Reference						
Dibromofluoromethane**	%	TM116		105 @	111 @	117 @	106 @	104 @	99.2 @
Toluene-d8**	%	TM116		96.6 @	96.9 @	98 @	95.6 @	94.7 @	93.9 @
4-Bromofluorobenzene**	%	TM116		92.1 @	95.7 @	100 @	90.6 @	93.7 @	86.4 @
Methyl Tertiary Butyl Ether	<10 µg/kg	TM116		<200 @ M	<200 @ M	<200 @ M	<200 @ M	<200 @ M	<200 @ M
Benzene	<9 µg/kg	TM116		<180 @ M	<180 @ M	<180 @ M	<180 @ M	<180 @ M	<180 @ M
Toluene	<7 µg/kg	TM116		<140 @ M	<140 @ M	<140 @ M	<140 @ M	<140 @ M	<140 @ M
Ethylbenzene	<4 µg/kg	TM116		<80 @ M	<80 @ M	<80 @ M	<80 @ M	<80 @ M	<80 @ M
p/m-Xylene	<10 µg/kg	TM116		<200 @ #	<200 @ #	<200 @ #	<200 @ #	<200 @ #	<200 @ #
o-Xylene	<10 µg/kg	TM116		<200 @ M	<200 @ M	<200 @ M	<200 @ M	<200 @ M	<200 @ M
Naphthalene	<13 µg/kg	TM116		479 M	316 M	<260 M	915 M	723 M	1290 M
Sum of Detected Xylenes	<0.02 mg/kg	TM116		<0.4 @	<0.4 @	<0.4 @	<0.4 @	<0.4 @	<0.4 @
Sum of BTEX	<40 µg/kg	TM116		<800 @	<800 @	<800 @	<800 @	<800 @	<800 @

Validated

CERTIFICATE OF ANALYSIS

SDG:	201216-93	**Client Reference:**	P18-669	**Report Number:**	584015
Location:	Llanwern	**Order Number:**	108281	**Superseded Report:**	

VOC MS (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	4A Comp -7	4A Comp -8	4A Comp -9	4A Comp -10	4A Comp -11	4A Comp -12
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	15/12/2020	15/12/2020	15/12/2020	15/12/2020	15/12/2020	15/12/2020
			Sample Time	.	.	.	.	.	.
			Date Received	16/12/2020	16/12/2020	16/12/2020	16/12/2020	16/12/2020	16/12/2020
			SDG Ref	201216-93	201216-93	201216-93	201216-93	201216-93	201216-93
			Lab Sample No.(s)	23443706	23443738	23443748	23443757	23443767	23443778
			AGS Reference						
Dibromofluoromethane**	%	TM116		102 @	103 @	104 @	108 @	110 @	103 @
Toluene-d8**	%	TM116		96.2 @	95.4 @	95 @	97.1 @	97.1 @	96.9 @
4-Bromofluorobenzene**	%	TM116		99.3 @	87.1 @	93.3 @	95 @	96.8 @	91 @
Methyl Tertiary Butyl Ether	<10 µg/kg	TM116		<200 @ M	<200 @ M	<200 @ M	<200 @ M	<200 @ M	<200 @ M
Benzene	<9 µg/kg	TM116		<180 @ M	<180 @ M	<180 @ M	<180 @ M	<180 @ M	<180 @ M
Toluene	<7 µg/kg	TM116		<140 @ M	<140 @ M	<140 @ M	<140 @ M	<140 @ M	<140 @ M
Ethylbenzene	<4 µg/kg	TM116		<80 @ M	<80 @ M	<80 @ M	<80 @ M	<80 @ M	<80 @ M
p/m-Xylene	<10 µg/kg	TM116		<200 @ #	<200 @ #	<200 @ #	<200 @ #	<200 @ #	<200 @ #
o-Xylene	<10 µg/kg	TM116		<200 @ M	<200 @ M	<200 @ M	<200 @ M	<200 @ M	<200 @ M
Naphthalene	<13 µg/kg	TM116		807 M	916 M	463 M	572 M	321 M	423 M
Sum of Detected Xylenes	<0.02 mg/kg	TM116		<0.4 @	<0.4 @	<0.4 @	<0.4 @	<0.4 @	<0.4 @
Sum of BTEX	<40 µg/kg	TM116		<800 @	<800 @	<800 @	<800 @	<800 @	<800 @

Validated

CERTIFICATE OF ANALYSIS

SDG:	201216-93	**Client Reference:**	P18-669	**Report Number:**	584015
Location:	Llanwern	**Order Number:**	108281	**Superseded Report:**	

VOC MS (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	4A Comp -13	4A Comp -14	4A Comp -15	4A Comp -16	4A Comp -17	4A Comp -18
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	15/12/2020	15/12/2020	15/12/2020	15/12/2020	15/12/2020	15/12/2020
			Sample Time	.	.	.	.	.	.
			Date Received	16/12/2020	16/12/2020	16/12/2020	16/12/2020	16/12/2020	16/12/2020
			SDG Ref	201216-93	201216-93	201216-93	201216-93	201216-93	201216-93
			Lab Sample No.(s)	23443783	23443787	23443791	23443796	23443807	23443818
			AGS Reference						
Dibromofluoromethane**	%	TM116		104 @	114 @	102 @	97.7 @	102 @	112 @
Toluene-d8**	%	TM116		96.1 @	97.8 @	95.1 @	91.5 @	91 @	98.2 @
4-Bromofluorobenzene**	%	TM116		91.4 @	97.5 @	91.1 @	84.5 @	86.8 @	100 @
Methyl Tertiary Butyl Ether	<10 µg/kg	TM116		<200 @ M	<200 @ M	<200 @ M	<200 @ #	<200 @ M	<200 @ M
Benzene	<9 µg/kg	TM116		<180 @ M	<180 @ M	<180 @ M	<180 @ #	<180 @ M	<180 @ M
Toluene	<7 µg/kg	TM116		<140 @ M	<140 @ M	<140 @ M	<140 @ #	<140 @ M	<140 @ M
Ethylbenzene	<4 µg/kg	TM116		<80 @ M	<80 @ M	<80 @ M	<80 @ #	<80 @ M	<80 @ M
p/m-Xylene	<10 µg/kg	TM116		<200 @ #	<200 @ #	<200 @ #	<200 @ #	<200 @ #	<200 @ #
o-Xylene	<10 µg/kg	TM116		<200 @ M	<200 @ M	<200 @ M	<200 @ #	<200 @ M	<200 @ M
Naphthalene	<13 µg/kg	TM116		962 M	410 M	972 M	13400 M	575 M	<260 M
Sum of Detected Xylenes	<0.02 mg/kg	TM116		<0.4 @	<0.4 @	<0.4 @	<0.4 @	<0.4 @	<0.4 @
Sum of BTEX	<40 µg/kg	TM116		<800 @	<800 @	<800 @	<800 @	<800 @	<800 @

Validated

CERTIFICATE OF ANALYSIS

SDG:	201216-93	**Client Reference:**	P18-669	**Report Number:**	584015
Location:	Llanwern	**Order Number:**	108281	**Superseded Report:**	

VOC MS (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	4A Comp -19	4A Comp -20	4A Comp -21	4A Comp -22	4A Comp -23	4A Comp -24
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	15/12/2020	15/12/2020	15/12/2020	15/12/2020	15/12/2020	15/12/2020
			Sample Time	.	.	.	.	.	.
			Date Received	16/12/2020	16/12/2020	16/12/2020	16/12/2020	16/12/2020	16/12/2020
			SDG Ref	201216-93	201216-93	201216-93	201216-93	201216-93	201216-93
			Lab Sample No.(s)	23443824	23443829	23443833	23443841	23443847	23443854
			AGS Reference						
Dibromofluoromethane**	%	TM116		114 @	99.5 @	109 @	99.7 @	107 @	98.5 @
Toluene-d8**	%	TM116		98 @	95.5 @	96.1 @	94.9 @	97.2 @	92.4 @
4-Bromofluorobenzene**	%	TM116		99 @	84.7 @	96.8 @	93.2 @	90.5 @	85.6 @
Methyl Tertiary Butyl Ether	<10 µg/kg	TM116		<200 @ M	<200 @ M	<200 @ M	<200 @ M	<200 @ M	<200 @ M
Benzene	<9 µg/kg	TM116		<180 @ M	<180 @ M	<180 @ M	<180 @ M	<180 @ M	<180 @ M
Toluene	<7 µg/kg	TM116		<140 @ M	<140 @ M	<140 @ M	<140 @ M	<140 @ M	<140 @ M
Ethylbenzene	<4 µg/kg	TM116		<80 @ M	<80 @ M	<80 @ M	<80 @ M	<80 @ M	<80 @ M
p/m-Xylene	<10 µg/kg	TM116		<200 @ #	<200 @ #	<200 @ #	<200 @ #	<200 @ #	<200 @ #
o-Xylene	<10 µg/kg	TM116		<200 @ M	<200 @ M	<200 @ M	<200 @ M	<200 @ M	<200 @ M
Naphthalene	<13 µg/kg	TM116		754 M	315 M	794 M	831 M	437 M	1710 M
Sum of Detected Xylenes	<0.02 mg/kg	TM116		<0.4 @	<0.4 @	<0.4 @	<0.4 @	<0.4 @	<0.4 @
Sum of BTEX	<40 µg/kg	TM116		<800 @	<800 @	<800 @	<800 @	<800 @	<800 @

Validated

CERTIFICATE OF ANALYSIS

SDG:	201216-93	**Client Reference:**	P18-669	**Report Number:**	584015
Location:	Llanwern	**Order Number:**	108281	**Superseded Report:**	

VOC MS (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	4A Comp -25	4A Comp -26	4A Comp -27	4A Comp -28	4A Comp -29	4A Comp -30
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	15/12/2020	15/12/2020	15/12/2020	15/12/2020	15/12/2020	15/12/2020
			Sample Time	.	.	.	.	.	.
			Date Received	16/12/2020	16/12/2020	16/12/2020	16/12/2020	16/12/2020	16/12/2020
			SDG Ref	201216-93	201216-93	201216-93	201216-93	201216-93	201216-93
			Lab Sample No.(s)	23443860	23443867	23443873	23443886	23443893	23443897
			AGS Reference						
Dibromofluoromethane**	%	TM116		102 @	117 @	96.5 @	106 @	111 @	113 @
Toluene-d8**	%	TM116		92.7 @	97.7 @	95.3 @	94.6 @	94.6 @	97.5 @
4-Bromofluorobenzene**	%	TM116		90.9 @	96.9 @	82.8 @	91.3 @	89 @	95.2 @
Methyl Tertiary Butyl Ether	<10 µg/kg	TM116		<200 @ M	<200 @ M	<200 @ M	<200 @ M	<200 @ M	<200 @ M
Benzene	<9 µg/kg	TM116		<180 @ M	<180 @ M	<180 @ M	<180 @ M	<180 @ M	<180 @ M
Toluene	<7 µg/kg	TM116		<140 @ M	<140 @ M	<140 @ M	<140 @ M	<140 @ M	<140 @ M
Ethylbenzene	<4 µg/kg	TM116		<80 @ M	<80 @ M	<80 @ M	<80 @ M	<80 @ M	<80 @ M
p/m-Xylene	<10 µg/kg	TM116		<200 @ #	<200 @ #	<200 @ #	<200 @ #	<200 @ #	<200 @ #
o-Xylene	<10 µg/kg	TM116		<200 @ M	<200 @ M	<200 @ M	<200 @ M	<200 @ M	<200 @ M
Naphthalene	<13 µg/kg	TM116		1510 M	927 M	544 M	582 M	472 M	554 M
Sum of Detected Xylenes	<0.02 mg/kg	TM116		<0.4 @	<0.4 @	<0.4 @	<0.4 @	<0.4 @	<0.4 @
Sum of BTEX	<40 µg/kg	TM116		<800 @	<800 @	<800 @	<800 @	<800 @	<800 @

Validated

CERTIFICATE OF ANALYSIS

SDG:	201216-93	**Client Reference:**	P18-669	**Report Number:**	584015
Location:	Llanwern	**Order Number:**	108281	**Superseded Report:**	

VOC MS (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	4A Comp -31	4A Comp -32	4A Comp -33	4A Comp -34	4A Comp -35	4A Comp -36
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	15/12/2020	15/12/2020	15/12/2020	15/12/2020	15/12/2020	15/12/2020
			Sample Time	.	.	.	.	.	.
			Date Received	16/12/2020	16/12/2020	16/12/2020	16/12/2020	16/12/2020	16/12/2020
			SDG Ref	201216-93	201216-93	201216-93	201216-93	201216-93	201216-93
			Lab Sample No.(s)	23443903	23443908	23443913	23443919	23443926	23443933
			AGS Reference						
Dibromofluoromethane**	%	TM116		101 @	104 @	98.1 @	99.7 @	99.5 @	95.6 @
Toluene-d8**	%	TM116		94.8 @	93.9 @	93.5 @	94.7 @	93.6 @	92.1 @
4-Bromofluorobenzene**	%	TM116		92.3 @	91.9 @	88.7 @	92.3 @	90.1 @	85.5 @
Methyl Tertiary Butyl Ether	<10 µg/kg	TM116		<200 @ M	<200 @ M	<200 @ M	<200 @ M	<200 @ M	<200 @ M
Benzene	<9 µg/kg	TM116		<180 @ M	<180 @ M	<180 @ M	<180 @ M	<180 @ M	<180 @ M
Toluene	<7 µg/kg	TM116		<140 @ M	<140 @ M	<140 @ M	<140 @ M	<140 @ M	<140 @ M
Ethylbenzene	<4 µg/kg	TM116		<80 @ M	<80 @ M	<80 @ M	<80 @ M	<80 @ M	<80 @ M
p/m-Xylene	<10 µg/kg	TM116		<200 @ #	<200 @ #	<200 @ #	<200 @ #	<200 @ #	<200 @ #
o-Xylene	<10 µg/kg	TM116		<200 @ M	<200 @ M	<200 @ M	<200 @ M	<200 @ M	<200 @ M
Naphthalene	<13 µg/kg	TM116		<260 M	365 M	476 M	<260 M	770 M	768 M
Sum of Detected Xylenes	<0.02 mg/kg	TM116		<0.4 @	<0.4 @	<0.4 @	<0.4 @	<0.4 @	<0.4 @
Sum of BTEX	<40 µg/kg	TM116		<800 @	<800 @	<800 @	<800 @	<800 @	<800 @

Validated

CERTIFICATE OF ANALYSIS

SDG:	201216-93	**Client Reference:**	P18-669	**Report Number:**	584015
Location:	Llanwern	**Order Number:**	108281	**Superseded Report:**	

VOC MS (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	4A Comp -37	4A Comp -38	4A Comp -39	4A Comp -40	2BN2-8	2BN2-9
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	15/12/2020	15/12/2020	15/12/2020	15/12/2020	14/12/2020	14/12/2020
			Sample Time	.	.	.	.	.	.
			Date Received	16/12/2020	16/12/2020	16/12/2020	16/12/2020	16/12/2020	16/12/2020
			SDG Ref	201216-93	201216-93	201216-93	201216-93	201216-93	201216-93
			Lab Sample No.(s)	23443944	23443961	23443967	23443973	23443648	23443730
			AGS Reference						
Dibromofluoromethane**	%	TM116		110 @	107 @	106 @	104 @	107 @	108 @
Toluene-d8**	%	TM116		95.2 @	98.3 @	97 @	98.3 @	93.3 @	97.6 @
4-Bromofluorobenzene**	%	TM116		91.9 @	96.8 @	94.8 @	93.4 @	86.7 @	93.2 @
Methyl Tertiary Butyl Ether	<10 µg/kg	TM116		<200 @ #	<200 @ M	<200 @ M	<2000 @ M	<200 @ M	<200 @ M
Benzene	<9 µg/kg	TM116		<180 @ #	<180 @ M	<180 @ M	<1800 @ M	<180 @ M	<180 @ M
Toluene	<7 µg/kg	TM116		<140 @ #	<140 @ M	<140 @ M	<1400 @ M	<140 @ M	<140 @ M
Ethylbenzene	<4 µg/kg	TM116		<80 @ #	<80 @ M	<80 @ M	<800 @ M	<80 @ M	<80 @ M
p/m-Xylene	<10 µg/kg	TM116		<200 @ #	<200 @ #	<200 @ #	<2000 @ #	<200 @ #	<200 @ #
o-Xylene	<10 µg/kg	TM116		<200 @ #	<200 @ M	<200 @ M	<2000 @ M	<200 @ M	<200 @ M
Naphthalene	<13 µg/kg	TM116		467 #	<260 M	465 M	831 M	<2600 M	778 M
Sum of Detected Xylenes	<0.02 mg/kg	TM116		<0.4 @	<0.4 @	<0.4 @	<4 @	<0.4 @	<0.4 @
Sum of BTEX	<40 µg/kg	TM116		<800 @	<800 @	<800 @	<8000 @	<800 @	<800 @

Validated

CERTIFICATE OF ANALYSIS

SDG:	201216-93	**Client Reference:**	P18-669	**Report Number:**	584015
Location:	Llanwern	**Order Number:**	108281	**Superseded Report:**	

VOC MS (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	2BN2-10	2BN2-11	2BN2-29	2BN2-30	2BN2-31	2BN2-32
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	14/12/2020	14/12/2020	14/12/2020	14/12/2020	14/12/2020	14/12/2020
			Sample Time	.	.	.	.	.	.
			Date Received	16/12/2020	16/12/2020	16/12/2020	16/12/2020	16/12/2020	16/12/2020
			SDG Ref	201216-93	201216-93	201216-93	201216-93	201216-93	201216-93
			Lab Sample No.(s)	23443814	23443880	23443952	23443977	23443986	23443995
			AGS Reference						
Dibromofluoromethane**	%	TM116		99.5 @	98 @	98.3 @	103 @	105 @	103 @
Toluene-d8**	%	TM116		95.4 @	93.9 @	91.1 @	92.3 @	95.7 @	98 @
4-Bromofluorobenzene**	%	TM116		86.9 @	83.2 @	80.9 @	84 @	90.3 @	92.3 @
Methyl Tertiary Butyl Ether	<10 µg/kg	TM116		<200 @ M	<200 @ M	<200 @ M	<200 @ M	<200 @ M	<200 @ M
Benzene	<9 µg/kg	TM116		<180 @ M	<180 @ M	<180 @ M	<180 @ M	<180 @ M	<180 @ M
Toluene	<7 µg/kg	TM116		<140 @ M	<140 @ M	<140 @ M	<140 @ M	<140 @ M	<140 @ M
Ethylbenzene	<4 µg/kg	TM116		<80 @ M	<80 @ M	<80 @ M	<80 @ M	<80 @ M	<80 @ M
p/m-Xylene	<10 µg/kg	TM116		<200 @ #	<200 @ #	<200 @ #	<200 @ #	<200 @ #	<200 @ #
o-Xylene	<10 µg/kg	TM116		<200 @ M	<200 @ M	<200 @ M	<200 @ M	<200 @ M	<200 @ M
Naphthalene	<13 µg/kg	TM116		4800 M	705 M	<2600 M	<2600 M	599 M	817 M
Sum of Detected Xylenes	<0.02 mg/kg	TM116		<0.4 @	<0.4 @	<0.4 @	<0.4 @	<0.4 @	<0.4 @
Sum of BTEX	<40 µg/kg	TM116		<800 @	<800 @	<800 @	<800 @	<800 @	<800 @

CERTIFICATE OF ANALYSIS

SDG:	201216-93	**Client Reference:**	P18-669	**Report Number:**	584015
Location:	Llanwern	**Order Number:**	108281	**Superseded Report:**	

VOC MS (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	2BN2-33	2BN2-34	2BN2-35	2BN2-36		
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00		
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)		
			Date Sampled	14/12/2020	14/12/2020	14/12/2020	14/12/2020		
			Sample Time	.	.	.	.		
			Date Received	16/12/2020	16/12/2020	16/12/2020	16/12/2020		
			SDG Ref	201216-93	201216-93	201216-93	201216-93		
			Lab Sample No.(s)	23444000	23443655	23443659	23443664		
			AGS Reference						
Dibromofluoromethane**	%	TM116		96.9 @	105 @	99.5 @	98 @		
Toluene-d8**	%	TM116		92.5 @	96 @	93.7 @	92.4 @		
4-Bromofluorobenzene**	%	TM116		89 @	91.2 @	82.4 @	84 @		
Methyl Tertiary Butyl Ether	<10 µg/kg	TM116		<200 @ M	<200 @ M	<200 @ M	<200 @ M		
Benzene	<9 µg/kg	TM116		<180 @ M	<180 @ M	<180 @ M	<180 @ M		
Toluene	<7 µg/kg	TM116		<140 @ M	<140 @ M	<140 @ M	<140 @ M		
Ethylbenzene	<4 µg/kg	TM116		<80 @ M	<80 @ M	<80 @ M	<80 @ M		
p/m-Xylene	<10 µg/kg	TM116		<200 @ #	<200 @ #	<200 @ #	<200 @ #		
o-Xylene	<10 µg/kg	TM116		<200 @ M	<200 @ M	<200 @ M	<200 @ M		
Naphthalene	<13 µg/kg	TM116		43400 M	4590 M	1200 M	<2600 M		
Sum of Detected Xylenes	<0.02 mg/kg	TM116		<0.4 @	<0.4 @	<0.4 @	<0.4 @		
Sum of BTEX	<40 µg/kg	TM116		<800 @	<800 @	<800 @	<800 @		

CERTIFICATE OF ANALYSIS

SDG:	201216-93	**Client Reference:**	P18-669	**Report Number:**	584015
Location:	Llanwern	**Order Number:**	108281	**Superseded Report:**	

Asbestos Identification - Solid Samples

Results Legend

#	ISO17025 accredited.
M	*m*CERTS accredited.
*	Subcontracted test.
(F)	Trigger breach confirmed
1-5&+$@	Sample deviation (see appendix)

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthophyllite	Fibrous Tremolite	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	4A Comp -1 0.00 - 0.00 SOLID 15/12/2020 00:00:00 16/12/2020 09:00:00 201216-93 23443672 TM048	22/12/20	Andrzej Ferfecki	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	4A Comp -3 0.00 - 0.00 SOLID 15/12/2020 00:00:00 16/12/2020 09:00:00 201216-93 23443682 TM048	23/12/2020	Agnieszka Chelmowska	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	4A Comp -5 0.00 - 0.00 SOLID 15/12/2020 00:00:00 16/12/2020 09:00:00 201216-93 23443692 TM048	22/12/2020	Barbara Urbanek-Walsh	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	4A Comp -7 0.00 - 0.00 SOLID 15/12/2020 00:00:00 16/12/2020 09:00:00 201216-93 23443706 TM048	23/12/2020	Agnieszka Chelmowska	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	4A Comp -9 0.00 - 0.00 SOLID 15/12/2020 00:00:00 16/12/2020 09:00:00 201216-93 23443748 TM048	04/01/21	Andrzej Ferfecki	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	4A Comp -11 0.00 - 0.00 SOLID 15/12/2020 00:00:00 16/12/2020 09:00:00 201216-93 23443767 TM048	23/12/2020	Marcin Magdziarek	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	4A Comp -13 0.00 - 0.00 SOLID 15/12/2020 00:00:00 16/12/2020 09:00:00 201216-93 23443783 TM048	23/12/20	Andrzej Ferfecki	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	4A Comp -15 0.00 - 0.00 SOLID 15/12/2020 00:00:00 16/12/2020 09:00:00 201216-93 23443791 TM048	23/12/20	Andrzej Ferfecki	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected

CERTIFICATE OF ANALYSIS

SDG: 201216-93 **Client Reference:** P18-669 **Report Number:** 584015
Location: Llanwern **Order Number:** 108281 **Superseded Report:**

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthophyllite	Fibrous Tremolite	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	4A Comp -17 0.00 - 0.00 SOLID 15/12/2020 00:00:00 16/12/2020 09:00:00 201216-93 23443807 TM048	23/12/2020	Agnieszka Chelmowska	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	4A Comp -19 0.00 - 0.00 SOLID 15/12/2020 00:00:00 16/12/2020 09:00:00 201216-93 23443824 TM048	22/12/20	Andrzej Ferfecki	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	4A Comp -21 0.00 - 0.00 SOLID 15/12/2020 00:00:00 16/12/2020 09:00:00 201216-93 23443833 TM048	23/12/2020	Agnieszka Chelmowska	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	4A Comp -23 0.00 - 0.00 SOLID 15/12/2020 00:00:00 16/12/2020 09:00:00 201216-93 23443847 TM048	23/12/2020	Agnieszka Chelmowska	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	4A Comp -25 0.00 - 0.00 SOLID 15/12/2020 00:00:00 16/12/2020 09:00:00 201216-93 23443860 TM048	23/12/20	Andrzej Ferfecki	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	4A Comp -27 0.00 - 0.00 SOLID 15/12/2020 00:00:00 16/12/2020 09:00:00 201216-93 23443873 TM048	23/12/2020	Agnieszka Chelmowska	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	4A Comp -29 0.00 - 0.00 SOLID 15/12/2020 00:00:00 16/12/2020 09:00:00 201216-93 23443893 TM048	04/01/21	Andrzej Ferfecki	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	4A Comp -31 0.00 - 0.00 SOLID 15/12/2020 00:00:00 16/12/2020 09:00:00 201216-93 23443903 TM048	22/12/20	Andrzej Ferfecki	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	4A Comp -33 0.00 - 0.00 SOLID 15/12/2020 00:00:00 16/12/2020 09:00:00 201216-93 23443913 TM048	23/12/2020	Agnieszka Chelmowska	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected

CERTIFICATE OF ANALYSIS

SDG: 201216-93 **Client Reference:** P18-669 **Report Number:** 584015
Location: Llanwern **Order Number:** 108281 **Superseded Report:**

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthophyllite	Fibrous Tremolite	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	4A Comp -35 0.00 - 0.00 SOLID 15/12/2020 00:00:00 16/12/2020 09:00:00 201216-93 23443926 TM048	23/12/2020	Agnieszka Chelmowska	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	4A Comp -37 0.00 - 0.00 SOLID 15/12/2020 00:00:00 16/12/2020 09:00:00 201216-93 23443944 TM048	23/12/2020	Agnieszka Chelmowska	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	4A Comp -39 0.00 - 0.00 SOLID 15/12/2020 00:00:00 16/12/2020 09:00:00 201216-93 23443967 TM048	23/12/2020	Agnieszka Chelmowska	Loose fibres in soil	Not Detected (#)	Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	2BN2-8 0.00 - 0.00 SOLID 14/12/2020 00:00:00 16/12/2020 09:00:00 201216-93 23443648 TM048	23/12/2020	Agnieszka Chelmowska	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	2BN2-10 0.00 - 0.00 SOLID 14/12/2020 00:00:00 16/12/2020 09:00:00 201216-93 23443814 TM048	22/12/2020	Barbara Urbanek-Walsh	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	2BN2-29 0.00 - 0.00 SOLID 14/12/2020 00:00:00 16/12/2020 09:00:00 201216-93 23443952 TM048	23/12/2020	Agnieszka Chelmowska	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	2BN2-31 0.00 - 0.00 SOLID 14/12/2020 00:00:00 16/12/2020 09:00:00 201216-93 23443986 TM048	23/12/2020	Agnieszka Chelmowska	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	2BN2-33 0.00 - 0.00 SOLID 14/12/2020 00:00:00 16/12/2020 09:00:00 201216-93 23444000 TM048	23/12/2020	Agnieszka Chelmowska	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	2BN2-35 0.00 - 0.00 SOLID 14/12/2020 00:00:00 16/12/2020 09:00:00 201216-93 23443659 TM048	23/12/2020	Agnieszka Chelmowska	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected

CERTIFICATE OF ANALYSIS

SDG:	201216-93	**Client Reference:**	P18-669	**Report Number:**	584015
Location:	Llanwern	**Order Number:**	108281	**Superseded Report:**	

Asbestos Quantification - Full

Results Legend

#	ISO17025 accredited.
M	*m*CERTS accredited.
*	Subcontracted test.
(F)	Trigger breach confirmed
1-5&♦§@	Sample deviation (see appendix)

		Additional Asbestos Components	Analysts Comments	Asbestos Quantification - Gravimetric - %	Asbestos Quantification - PCOM	Asbestos Quantification - Total - %
Cust. Sample Ref.	4A Comp -39	None (#)	N/A	<0.001 (#)	<0.001 (#)	0.0012 (#)
Depth (m)	0.00 - 0.00					
Sample Type	SOLID					
Date Sampled	15/12/2020 00:00:00					
Date Received	16/12/2020 09:00:00					
SDG	201216-93					
Original Sample	23443967					
Method Number	TM304					

Table of Results - Appendix

Method No	Reference	Description
PM024	Modified BS 1377	Soil preparation including homogenisation, moisture screens of soils for Asbestos Containing Material
TM024	Method 4500A & B, AWWA/APHA, 20th Ed., 1999	Determination of Exchangeable Ammonium and Ammoniacal Nitrogen as N by titration on solids
TM048	HSG 248, Asbestos: The analysts' guide for sampling, analysis and clearance procedures	Identification of Asbestos in Bulk Material
TM062 (S)	National Grid Property Holdings Methods for the Collection & Analysis of Samples from National Grid Sites version 1 Sec 3.9	Determination of Phenols in Soils by HPLC
TM089	Modified: US EPA Methods 8020 & 602	Determination of Gasoline Range Hydrocarbons (GRO) by Headspace GC-FID (C4-C12)
TM116	Modified: US EPA Method 8260, 8120, 8020, 624, 610 & 602	Determination of Volatile Organic Compounds by Headspace / GC-MS
TM132	In - house Method	ELTRA CS800 Operators Guide
TM133	BS 1377: Part 3 1990;BS 6068-2.5	Determination of pH in Soil and Water using the GLpH pH Meter
TM153	Method 4500A,B,C, I, M AWWA/APHA, 20th Ed., 1999	Determination of Total Cyanide, Free (Easily Liberatable) Cyanide and Thiocyanate using the Skalar SANS+ System Segmented Flow Analyser
TM181	US EPA Method 6010B	Determination of Routine Metals in Soil by iCap 6500 Duo ICP-OES
TM218	Shaker extraction - EPA method 3546.	The determination of PAH in soil samples by GC-MS
TM304	HSE Contract research Report no 83/1996	Asbestos Quantification in Soil: Fibres identified by morphology only
TM414	Analysis of Petroleum Hydrocarbons in Environmental Media – Total Petroleum Hydrocarbon Criteria	Determination of Speciated Extractable Petroleum Hydrocarbons in Soils by GCxGC-FID

NA = not applicable.

Chemical testing (unless subcontracted) performed at ALS Life Sciences Ltd Hawarden (Method codes TM) or ALS Life Sciences Ltd Aberdeen (Method codes S).

CERTIFICATE OF ANALYSIS

SDG:	201216-93	**Client Reference:**	P18-669	**Report Number:**	584015
Location:	Llanwern	**Order Number:**	108281	**Superseded Report:**	

Test Completion Dates

Lab Sample No(s)	23443672	23443677	23443682	23443686	23443692	23443697	23443706	23443738	23443748	23443757
Customer Sample Ref.	4A Comp -1	4A Comp -2	4A Comp -3	4A Comp -4	4A Comp -5	4A Comp -6	4A Comp -7	4A Comp -8	4A Comp -9	4A Comp -10
AGS Ref.										
Depth	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
Ammonium Soil by Titration	29-Dec-2020	24-Dec-2020	29-Dec-2020	29-Dec-2020	24-Dec-2020	24-Dec-2020	29-Dec-2020	29-Dec-2020	29-Dec-2020	24-Dec-2020
Asbestos ID in Solid Samples	22-Dec-2020		23-Dec-2020		22-Dec-2020		23-Dec-2020		04-Jan-2021	
Cyanide Comp/Free/Total/Thiocyanate	21-Dec-2020	22-Dec-2020	22-Dec-2020	22-Dec-2020	23-Dec-2020	23-Dec-2020	24-Dec-2020	21-Dec-2020	23-Dec-2020	22-Dec-2020
EPH CWG GC (S)	11-Jan-2021	08-Jan-2021	08-Jan-2021	08-Jan-2021	08-Jan-2021	08-Jan-2021	14-Jan-2021	14-Jan-2021	14-Jan-2021	11-Jan-2021
GRO by GC-FID (S)	12-Jan-2021	12-Jan-2021	11-Jan-2021	11-Jan-2021	12-Jan-2021	12-Jan-2021	12-Jan-2021	11-Jan-2021	12-Jan-2021	11-Jan-2021
Metals in solid samples by OES	29-Dec-2020	24-Dec-2020	23-Dec-2020	13-Jan-2021	30-Dec-2020	24-Dec-2020	13-Jan-2021	24-Dec-2020	24-Dec-2020	24-Dec-2020
PAH by GCMS	18-Dec-2020	19-Dec-2020	21-Dec-2020	24-Dec-2020	19-Dec-2020	21-Dec-2020	24-Dec-2020	21-Dec-2020	19-Dec-2020	24-Dec-2020
pH	23-Dec-2020	23-Dec-2020	23-Dec-2020	18-Dec-2020	23-Dec-2020	23-Dec-2020	23-Dec-2020	22-Dec-2020	23-Dec-2020	22-Dec-2020
Phenols by HPLC (S)	21-Dec-2020	20-Dec-2020	20-Dec-2020	24-Dec-2020	20-Dec-2020	20-Dec-2020	24-Dec-2020	20-Dec-2020	23-Dec-2020	20-Dec-2020
Sample description	17-Dec-2020	17-Dec-2020	17-Dec-2020	17-Dec-2020	17-Dec-2020	17-Dec-2020	22-Dec-2020	17-Dec-2020	17-Dec-2020	17-Dec-2020
Total Organic Carbon	23-Dec-2020	23-Dec-2020	23-Dec-2020	23-Dec-2020	23-Dec-2020	22-Dec-2020	29-Dec-2020	22-Dec-2020	23-Dec-2020	23-Dec-2020
TPH CWG GC (S)	12-Jan-2021	12-Jan-2021	11-Jan-2021	11-Jan-2021	12-Jan-2021	12-Jan-2021	14-Jan-2021	14-Jan-2021	14-Jan-2021	11-Jan-2021
VOC MS (S)	07-Jan-2021	07-Jan-2021	08-Jan-2021	07-Jan-2021	08-Jan-2021	08-Jan-2021	08-Jan-2021	08-Jan-2021	08-Jan-2021	07-Jan-2021

Lab Sample No(s)	23443767	23443778	23443783	23443787	23443791	23443796	23443807	23443818	23443824	23443829
Customer Sample Ref.	4A Comp -11	4A Comp -12	4A Comp -13	4A Comp -14	4A Comp -15	4A Comp -16	4A Comp -17	4A Comp -18	4A Comp -19	4A Comp -20
AGS Ref.										
Depth	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
Ammonium Soil by Titration	29-Dec-2020	29-Dec-2020	29-Dec-2020	29-Dec-2020	24-Dec-2020	24-Dec-2020	24-Dec-2020	24-Dec-2020	29-Dec-2020	24-Dec-2020
Asbestos ID in Solid Samples	23-Dec-2020		23-Dec-2020		23-Dec-2020		23-Dec-2020		22-Dec-2020	
Cyanide Comp/Free/Total/Thiocyanate	22-Dec-2020	24-Dec-2020	24-Dec-2020	23-Dec-2020	23-Dec-2020	21-Dec-2020	24-Dec-2020	23-Dec-2020	21-Dec-2020	22-Dec-2020
EPH CWG GC (S)	13-Jan-2021	13-Jan-2021	14-Jan-2021	14-Jan-2021	13-Jan-2021	14-Jan-2021	07-Jan-2021	11-Jan-2021	11-Jan-2021	11-Jan-2021
GRO by GC-FID (S)	11-Jan-2021	19-Jan-2021	11-Jan-2021	11-Jan-2021	11-Jan-2021	12-Jan-2021	12-Jan-2021	07-Jan-2021	07-Jan-2021	19-Jan-2021
Metals in solid samples by OES	29-Dec-2020	13-Jan-2021	13-Jan-2021	24-Dec-2020	30-Dec-2020	24-Dec-2020	30-Dec-2020	22-Dec-2020	23-Dec-2020	23-Dec-2020
PAH by GCMS	24-Dec-2020	24-Dec-2020	24-Dec-2020	21-Dec-2020	24-Dec-2020	24-Dec-2020	24-Dec-2020	24-Dec-2020	22-Dec-2020	21-Dec-2020
pH	23-Dec-2020	23-Dec-2020	23-Dec-2020	22-Dec-2020	23-Dec-2020	22-Dec-2020	23-Dec-2020	23-Dec-2020	23-Dec-2020	23-Dec-2020
Phenols by HPLC (S)	21-Dec-2020	24-Dec-2020	24-Dec-2020	20-Dec-2020	20-Dec-2020	20-Dec-2020	23-Dec-2020	21-Dec-2020	20-Dec-2020	23-Dec-2020
Sample description	17-Dec-2020	22-Dec-2020	22-Dec-2020	17-Dec-2020	17-Dec-2020	17-Dec-2020	17-Dec-2020	17-Dec-2020	17-Dec-2020	17-Dec-2020
Total Organic Carbon	23-Dec-2020	29-Dec-2020	29-Dec-2020	22-Dec-2020	23-Dec-2020	22-Dec-2020	23-Dec-2020	23-Dec-2020	22-Dec-2020	22-Dec-2020
TPH CWG GC (S)	13-Jan-2021	19-Jan-2021	14-Jan-2021	14-Jan-2021	13-Jan-2021	14-Jan-2021	12-Jan-2021	11-Jan-2021	11-Jan-2021	19-Jan-2021
VOC MS (S)	07-Jan-2021	15-Jan-2021	07-Jan-2021	07-Jan-2021	08-Jan-2021	08-Jan-2021	08-Jan-2021	07-Jan-2021	07-Jan-2021	15-Jan-2021

Lab Sample No(s)	23443833	23443841	23443847	23443854	23443860	23443867	23443873	23443886	23443893	23443897
Customer Sample Ref.	4A Comp -21	4A Comp -22	4A Comp -23	4A Comp -24	4A Comp -25	4A Comp -26	4A Comp -27	4A Comp -28	4A Comp -29	4A Comp -30
AGS Ref.										
Depth	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
Ammonium Soil by Titration	29-Dec-2020	29-Dec-2020	24-Dec-2020	24-Dec-2020	29-Dec-2020	29-Dec-2020	29-Dec-2020	29-Dec-2020	24-Dec-2020	29-Dec-2020
Asbestos ID in Solid Samples	23-Dec-2020		23-Dec-2020		23-Dec-2020		23-Dec-2020		04-Jan-2021	
Cyanide Comp/Free/Total/Thiocyanate	24-Dec-2020	22-Dec-2020	21-Dec-2020	23-Dec-2020	22-Dec-2020	22-Dec-2020	21-Dec-2020	22-Dec-2020	23-Dec-2020	24-Dec-2020
EPH CWG GC (S)	08-Jan-2021	14-Jan-2021	08-Jan-2021	08-Jan-2021	08-Jan-2021	11-Jan-2021	08-Jan-2021	08-Jan-2021	11-Jan-2021	14-Jan-2021
GRO by GC-FID (S)	11-Jan-2021	12-Jan-2021	07-Jan-2021	12-Jan-2021	12-Jan-2021	07-Jan-2021	19-Jan-2021	11-Jan-2021	11-Jan-2021	11-Jan-2021
Metals in solid samples by OES	30-Dec-2020	24-Dec-2020	30-Dec-2020	13-Jan-2021	29-Dec-2020	23-Dec-2020	30-Dec-2020	24-Dec-2020	30-Dec-2020	13-Jan-2021
PAH by GCMS	19-Dec-2020	21-Dec-2020	19-Dec-2020	24-Dec-2020	19-Dec-2020	24-Dec-2020	19-Dec-2020	21-Dec-2020	19-Dec-2020	24-Dec-2020
pH	23-Dec-2020	22-Dec-2020	23-Dec-2020	18-Dec-2020	23-Dec-2020	23-Dec-2020	23-Dec-2020	22-Dec-2020	23-Dec-2020	23-Dec-2020
Phenols by HPLC (S)	23-Dec-2020	20-Dec-2020	20-Dec-2020	24-Dec-2020	20-Dec-2020	20-Dec-2020	20-Dec-2020	20-Dec-2020	20-Dec-2020	24-Dec-2020
Sample description	17-Dec-2020	17-Dec-2020	17-Dec-2020	17-Dec-2020	17-Dec-2020	17-Dec-2020	17-Dec-2020	17-Dec-2020	17-Dec-2020	22-Dec-2020
Total Organic Carbon	23-Dec-2020	22-Dec-2020	23-Dec-2020	29-Dec-2020	23-Dec-2020	23-Dec-2020	23-Dec-2020	23-Dec-2020	23-Dec-2020	29-Dec-2020
TPH CWG GC (S)	11-Jan-2021	14-Jan-2021	08-Jan-2021	12-Jan-2021	12-Jan-2021	11-Jan-2021	19-Jan-2021	11-Jan-2021	11-Jan-2021	14-Jan-2021
VOC MS (S)	07-Jan-2021	08-Jan-2021	07-Jan-2021	08-Jan-2021	08-Jan-2021	08-Jan-2021	15-Jan-2021	07-Jan-2021	07-Jan-2021	08-Jan-2021

Validated

CERTIFICATE OF ANALYSIS

SDG:	201216-93	**Client Reference:**	P18-669	**Report Number:**	584015
Location:	Llanwern	**Order Number:**	108281	**Superseded Report:**	

Lab Sample No(s)	23443903	23443908	23443913	23443919	23443926	23443933	23443944	23443961	23443967	23443973
Customer Sample Ref.	4A Comp -31	4A Comp -32	4A Comp -33	4A Comp -34	4A Comp -35	4A Comp -36	4A Comp -37	4A Comp -38	4A Comp -39	4A Comp -40
AGS Ref.										
Depth	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
Ammonium Soil by Titration	24-Dec-2020	24-Dec-2020	24-Dec-2020	24-Dec-2020	29-Dec-2020	29-Dec-2020	29-Dec-2020	29-Dec-2020	29-Dec-2020	29-Dec-2020
Asbestos ID in Solid Samples	22-Dec-2020		23-Dec-2020		23-Dec-2020		23-Dec-2020		23-Dec-2020	
Asbestos Quantification - Full									08-Jan-2021	
Cyanide Comp/Free/Total/Thiocyanate	23-Dec-2020	23-Dec-2020	22-Dec-2020	23-Dec-2020	22-Dec-2020	22-Dec-2020	21-Dec-2020	23-Dec-2020	21-Dec-2020	22-Dec-2020
EPH CWG GC (S)	14-Jan-2021	08-Jan-2021	14-Jan-2021	14-Jan-2021	13-Jan-2021	13-Jan-2021	13-Jan-2021	11-Jan-2021	11-Jan-2021	13-Jan-2021
GRO by GC-FID (S)	11-Jan-2021	11-Jan-2021	11-Jan-2021	12-Jan-2021	11-Jan-2021	12-Jan-2021	11-Jan-2021	18-Jan-2021	11-Jan-2021	19-Jan-2021
Metals in solid samples by OES	30-Dec-2020	24-Dec-2020	30-Dec-2020	13-Jan-2021	29-Dec-2020	24-Dec-2020	29-Dec-2020	23-Dec-2020	30-Dec-2020	24-Dec-2020
PAH by GCMS	21-Dec-2020	19-Dec-2020	21-Dec-2020	24-Dec-2020	19-Dec-2020	21-Dec-2020	24-Dec-2020	19-Dec-2020	19-Dec-2020	19-Dec-2020
pH	23-Dec-2020	22-Dec-2020	23-Dec-2020	22-Dec-2020	23-Dec-2020	22-Dec-2020	23-Dec-2020	23-Dec-2020	23-Dec-2020	22-Dec-2020
Phenols by HPLC (S)	20-Dec-2020	20-Dec-2020	20-Dec-2020	24-Dec-2020	21-Dec-2020	20-Dec-2020	20-Dec-2020	21-Dec-2020	20-Dec-2020	20-Dec-2020
Sample description	17-Dec-2020	17-Dec-2020	17-Dec-2020	17-Dec-2020	17-Dec-2020	17-Dec-2020	17-Dec-2020	17-Dec-2020	17-Dec-2020	17-Dec-2020
Total Organic Carbon	23-Dec-2020	22-Dec-2020	23-Dec-2020	23-Dec-2020	23-Dec-2020	22-Dec-2020	23-Dec-2020	22-Dec-2020	23-Dec-2020	22-Dec-2020
TPH CWG GC (S)	14-Jan-2021	11-Jan-2021	14-Jan-2021	14-Jan-2021	13-Jan-2021	13-Jan-2021	13-Jan-2021	18-Jan-2021	11-Jan-2021	19-Jan-2021
VOC MS (S)	08-Jan-2021	08-Jan-2021	08-Jan-2021	08-Jan-2021	08-Jan-2021	08-Jan-2021	08-Jan-2021	15-Jan-2021	07-Jan-2021	15-Jan-2021

Lab Sample No(s)	23443648	23443730	23443814	23443880	23443952	23443977	23443986	23443995	23444000	23443655
Customer Sample Ref.	2BN2-8	2BN2-9	2BN2-10	2BN2-11	2BN2-29	2BN2-30	2BN2-31	2BN2-32	2BN2-33	2BN2-34
AGS Ref.										
Depth	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
Ammonium Soil by Titration	24-Dec-2020	29-Dec-2020	24-Dec-2020	24-Dec-2020	29-Dec-2020	24-Dec-2020	24-Dec-2020	29-Dec-2020	29-Dec-2020	24-Dec-2020
Asbestos ID in Solid Samples	23-Dec-2020		22-Dec-2020		23-Dec-2020		23-Dec-2020		23-Dec-2020	
Cyanide Comp/Free/Total/Thiocyanate	23-Dec-2020	22-Dec-2020	21-Dec-2020	21-Dec-2020	23-Dec-2020	22-Dec-2020	23-Dec-2020	23-Dec-2020	22-Dec-2020	24-Dec-2020
EPH CWG GC (S)	08-Jan-2021	11-Jan-2021	08-Jan-2021	11-Jan-2021	11-Jan-2021	08-Jan-2021	14-Jan-2021	08-Jan-2021	13-Jan-2021	08-Jan-2021
GRO by GC-FID (S)	13-Jan-2021	11-Jan-2021	11-Jan-2021	13-Jan-2021	13-Jan-2021	13-Jan-2021	11-Jan-2021	11-Jan-2021	12-Jan-2021	11-Jan-2021
Metals in solid samples by OES	30-Dec-2020	24-Dec-2020	30-Dec-2020	24-Dec-2020	30-Dec-2020	24-Dec-2020	30-Dec-2020	24-Dec-2020	29-Dec-2020	24-Dec-2020
PAH by GCMS	19-Dec-2020	21-Dec-2020	24-Dec-2020	24-Dec-2020	24-Dec-2020	21-Dec-2020	24-Dec-2020	18-Dec-2020	21-Dec-2020	18-Dec-2020
pH	23-Dec-2020	22-Dec-2020	23-Dec-2020	18-Dec-2020	23-Dec-2020	22-Dec-2020	23-Dec-2020	18-Dec-2020	23-Dec-2020	18-Dec-2020
Phenols by HPLC (S)	20-Dec-2020	20-Dec-2020	21-Dec-2020	23-Dec-2020	20-Dec-2020	20-Dec-2020	23-Dec-2020	23-Dec-2020	20-Dec-2020	23-Dec-2020
Sample description	17-Dec-2020	17-Dec-2020	17-Dec-2020	17-Dec-2020	17-Dec-2020	17-Dec-2020	17-Dec-2020	17-Dec-2020	17-Dec-2020	17-Dec-2020
Total Organic Carbon	23-Dec-2020	22-Dec-2020	23-Dec-2020	22-Dec-2020	23-Dec-2020	22-Dec-2020	23-Dec-2020	22-Dec-2020	22-Dec-2020	22-Dec-2020
TPH CWG GC (S)	13-Jan-2021	11-Jan-2021	11-Jan-2021	13-Jan-2021	13-Jan-2021	13-Jan-2021	14-Jan-2021	11-Jan-2021	13-Jan-2021	11-Jan-2021
VOC MS (S)	11-Jan-2021	08-Jan-2021	08-Jan-2021	12-Jan-2021	11-Jan-2021	11-Jan-2021	07-Jan-2021	07-Jan-2021	08-Jan-2021	07-Jan-2021

Lab Sample No(s)	23443659	23443664
Customer Sample Ref.	2BN2-35	2BN2-36
AGS Ref.		
Depth	0.00 - 0.00	0.00 - 0.00
Type	Soil/Solid (S)	Soil/Solid (S)
Ammonium Soil by Titration	24-Dec-2020	24-Dec-2020
Asbestos ID in Solid Samples	23-Dec-2020	
Cyanide Comp/Free/Total/Thiocyanate	22-Dec-2020	23-Dec-2020
EPH CWG GC (S)	08-Jan-2021	07-Jan-2021
GRO by GC-FID (S)	19-Jan-2021	11-Jan-2021
Metals in solid samples by OES	30-Dec-2020	24-Dec-2020
PAH by GCMS	24-Dec-2020	18-Dec-2020
pH	23-Dec-2020	18-Dec-2020
Phenols by HPLC (S)	23-Dec-2020	23-Dec-2020
Sample description	17-Dec-2020	17-Dec-2020
Total Organic Carbon	23-Dec-2020	22-Dec-2020
TPH CWG GC (S)	19-Jan-2021	11-Jan-2021
VOC MS (S)	15-Jan-2021	07-Jan-2021

Appendix General

1. Results are expressed on a dry weight basis (dried at 35ºC) for all soil analyses except for the following: NRA and CEN Leach tests, flash point LOI, pH, ammonium as NH4 by the BRE method, VOC TICs and SVOC TICs.

2. If sufficient sample is received a sub sample will be retained free of charge for 30 days after analysis is completed (e-mailed) for all sample types unless the sample is destroyed on testing. The prepared soil sub sample that is analysed for asbestos will be retained for a period of 6 months after the analysis date. All bulk samples will be retained for a period of 6 months after the analysis date. All samples received and not scheduled will be disposed of one month after the date of receipt unless we are instructed to the contrary. Once the initial period has expired, a storage charge will be applied for each month or part thereof until the client cancels the request for sample storage. ALS reserve the right to charge for samples received and stored but not analysed.

3. With respect to turnaround, we will always endeavour to meet client requirements wherever possible, but turnaround times cannot be absolutely guaranteed due to so many variables beyond our control.

4. We take responsibility for any test performed by sub-contractors (marked with an asterisk). We endeavour to use UKAS/MCERTS Accredited Laboratories, who either complete a quality questionnaire or are audited by ourselves. For some determinands there are no UKAS/MCERTS Accredited Laboratories, in this instance a laboratory with a known track record will be utilised.

5. If no separate volatile sample is supplied by the client, or if a headspace or sediment is present in the volatile sample, the integrity of the data may be compromised. This will be flagged up as an invalid VOC on the test schedule and the result marked as deviating on the test certificate.

6. NDP - No determination possible due to insufficient/unsuitable sample.

7. Results relate only to the items tested.

8. LoDs (Limit of Detection) for wet tests reported on a dry weight basis are not corrected for moisture content.

9. **Surrogate recoveries** - Surrogates are added to your sample to monitor recovery of the test requested. A % recovery is reported, results are not corrected for the recovery measured. Typical recoveries for organics tests are 70-130%. Recoveries in soils are affected by organic rich or clay rich matrices. Waters can be affected by remediation fluids or high amounts of sediment. Test results are only ever reported if all of the associated quality checks pass; it is assumed that all recoveries outside of the values above are due to matrix affect.

10. Stones/debris are not routinely removed. We always endeavour to take a representative sub sample from the received sample.

11. In certain circumstances the method detection limit may be elevated due to the sample being outside the calibration range. Other factors that may contribute to this include possible interferences. In both cases the sample would be diluted which would cause the method detection limit to be raised.

12. Mercury results quoted on soils will not include volatile mercury as the analysis is performed on a dried and crushed sample.

13. For leachate preparations other than Zero Headspace Extraction (ZHE) volatile loss may occur.

14. For the BSEN 12457-3 two batch process to allow the cumulative release to be calculated, the volume of the leachate produced is measured and filtered for all tests. We therefore cannot carry out any unfiltered analysis. The tests affected include volatiles GCFID/GCMS and all subcontracted analysis.

15. Analysis and identification of specific compounds using GCFID is by retention time only, and we routinely calibrate and quantify for benzene, toluene, ethylbenzenes and xylenes (BTEX). For total volatiles in the C5-C12 range, the total area of the chromatogram is integrated and expressed as ug/kg or ug/l. Although this analysis is commonly used for the quantification of gasoline range organics (GRO), the system will also detect other compounds such as chlorinated solvents, and this may lead to a falsely high result with respect to hydrocarbons only. It is not possible to specifically identify these non-hydrocarbons, as standards are not routinely run for any other compounds, and for more definitive identification, volatiles by GCMS should be utilised.

16. We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample. Other coarse granular material such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

17. **Tentatively Identified Compounds (TICs)** are non-target peaks in VOC and SVOC analysis. All non-target peaks detected with a concentration above the LoD are subjected to a mass spectral library search. Non-target peaks with a library search confidence of >75% are reported based on the best mass spectral library match. When a non-target peak with a library search confidence of <75% is detected it is reported as "mixed hydrocarbons". Non-target compounds identified from the scan data are semi-quantified relative to one of the deuterated internal standards, under the same chromatographic conditions as the target compounds. This result is reported as a semi-quantitative value and reported as Tentatively Identified Compounds (TICs). TICs are outside the scope of UKAS accreditation and are not moisture corrected.

18. **Sample Deviations**

If a sample is classed as deviated then the associated results may be compromised.

1	**Container with Headspace provided for volatiles analysis**
2	**Incorrect container received**
3	**Deviation from method**
4	**Matrix interference**
♦	**Sample holding time exceeded in laboratory**
@	**Sample holding time exceeded due to late arrival of instructions or samples**
§	**Sampled on date not provided**

19. **Asbestos**

When requested, the individual sub sample scheduled will be analysed in house for the presence of asbestos fibres and asbestos containing material by our documented in house method TM048 based on HSG 248 (2005), which is accredited to ISO17025. If a specific asbestos fibre type is not found this will be reported as "Not detected". If no asbestos fibre types are found all will be reported as "Not detected" and the sub sample analysed deemed to be clear of asbestos. If an asbestos fibre type is found it will be reported as detected (for each fibre type found). Testing can be carried out on asbestos positive samples, but, due to Health and Safety considerations, may be replaced by alternative tests or reported as No Determination Possible (NDP). The quantity of asbestos present is not determined unless specifically requested.

Identification of Asbestos in Bulk Materials & Soils

The results for identification of asbestos in bulk materials are obtained from supplied bulk materials which have been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

The results for identification of asbestos in soils are obtained from a homogenised sub sample which has been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

Asbestos Type	Common Name
Chrysotile	White Asbestos
Amosite	Brown Asbestos
Crocidolite	Blue Asbestos
Fibrous Actinolite	-
Fibrous Anthophyllite	-
Fibrous Tremolite	-

Visual Estimation Of Fibre Content

Estimation of fibre content is not permitted as part of our UKAS accredited test other than: - Trace - Where only one or two asbestos fibres were identified.

Respirable Fibres

Respirable fibres are defined as fibres of <3 µm diameter, longer than 5 µm and with aspect ratios of at least 3:1 that can be inhaled into the lower regions of the lung and are generally acknowledged to be most important predictor of hazard and risk for cancers of the lung.
Standing Committee of Analysts, *The Quantification of Asbestos in Soil (2017).*

Further guidance on typical asbestos fibre content of manufactured products can be found in HSG 264.

The identification of asbestos containing materials and soils falls within our schedule of tests for which we hold UKAS accreditation, however opinions, interpretations and all other information contained in the report are outside the scope of UKAS accreditation.

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Manor Road (off Manor Lane)
Hawarden
Deeside
CH5 3US
Tel: (01244) 528700
Fax: (01244) 528701
email: hawardencustomerservices@alsglobal.com
Website: www.alsenvironmental.co.uk

Rodgers Leask
Office 225
2430/2440
Aztec West
Almondsbury
Bristol
BS32 4QA

Attention: Elliot Thomas

CERTIFICATE OF ANALYSIS

Date of report Generation:	28 January 2021
Customer:	Rodgers Leask
Sample Delivery Group (SDG):	210115-27
Your Reference:	P18-669
Location:	Llanwern
Report No:	584712

This report has been revised and directly supersedes 584671 in its entirety.

We received 27 samples on Friday January 15, 2021 and 27 of these samples were scheduled for analysis which was completed on Thursday January 28, 2021. Accredited laboratory tests are defined within the report, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation.

Should this report require incorporation into client reports, it must be used in its entirety and not simply with the data sections alone.

Chemical testing (unless subcontracted) performed at ALS Life Sciences Ltd Hawarden (Method codes TM) or ALS Life Sciences Ltd Aberdeen (Method codes S).

All sample data is provided by the customer. The reported results relate to the sample supplied, and on the basis that this data is correct.
Incorrect sampling dates and/or sample information will affect the validity of results.
The customer is not permitted to reproduce this report except in full without the approval of the laboratory.

Approved By:

Sonia McWhan

Operations Manager

CERTIFICATE OF ANALYSIS

SDG:	210115-27	**Client Reference:**	P18-669	**Report Number:**	584712
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	584671

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
23547855	AL24-1		0.70 - 0.70	13/01/2021
23547865	AL24-2		1.30 - 1.30	13/01/2021
23547873	AM33-1		0.30 - 0.30	13/01/2021
23547879	AM33-2		1.30 - 1.30	13/01/2021
23547829	AN23-1		0.20 - 0.20	13/01/2021
23547841	AN23-2		1.50 - 1.50	13/01/2021
23548024	AO27-1		0.60 - 0.60	13/01/2021
23548034	AO27-2		1.20 - 1.20	13/01/2021
23547788	AO29-1		0.50 - 0.50	13/01/2021
23547917	AO29-2		1.50 - 1.50	13/01/2021
23548085	AQ24-1		0.20 - 0.20	13/01/2021
23547819	AQ24-2		1.50 - 1.50	13/01/2021
23548065	AQ25-1		0.20 - 0.20	13/01/2021
23548075	AQ25-2		1.50 - 1.50	13/01/2021
23548044	AQ26-1		0.20 - 0.20	13/01/2021
23548052	AQ26-2		1.50 - 1.50	13/01/2021
23547887	W168-1		0.20 - 0.20	14/01/2021
23547896	W168-2		0.20 - 0.20	14/01/2021
23547907	W168-3		0.20 - 0.20	14/01/2021
23547927	W168-4		0.20 - 0.20	14/01/2021
23547935	W168-5		0.20 - 0.20	14/01/2021
23547942	W168-6		0.20 - 0.20	14/01/2021
23547958	W168-7		0.20 - 0.20	14/01/2021
23547970	W168-8		0.20 - 0.20	14/01/2021
23547983	W168-9		0.20 - 0.20	14/01/2021
23548001	W168-10		0.20 - 0.20	14/01/2021
23548010	W168-11		0.20 - 0.20	14/01/2021

Only received samples which have had analysis scheduled will be shown on the following pages.

Validated

CERTIFICATE OF ANALYSIS

SDG:	210115-27	**Client Reference:**	P18-669	**Report Number:**	584712
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	584671

Results Legend

X Test

N No Determination Possible

Sample Types -

S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

Lab Sample No(s)			23547855		23547865		23547873		23547879		23547929		23547841		23548024		23548034				
Customer Sample Reference			AL24-1		AL24-2		AM33-1		AM33-2		AN23-1		AN23-2		AO27-1		AO27-2				
AGS Reference																					
Depth (m)			0.70 - 0.70		1.30 - 1.30		0.30 - 0.30		1.30 - 1.30		0.20 - 0.20		1.50 - 1.50		0.60 - 0.60		1.20 - 1.20				
Container			1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)
Sample Type			S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
Ammonium Soil by Titration	All	NDPs: 0 Tests: 27		X		X			X		X			X		X			X		X
Asbestos ID in Solid Samples	All	NDPs: 0 Tests: 14	X					X					X					X			
Asbestos Quantification - Full	All	NDPs: 0 Tests: 1																			
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 27		X		X			X		X			X		X			X		X
EPH CWG GC (S)	All	NDPs: 0 Tests: 27		X		X			X		X			X		X			X		X
GRO by GC-FID (S)	All	NDPs: 0 Tests: 27			X		X			X		X			X		X			X	
Metals in solid samples by OES	All	NDPs: 0 Tests: 27		X		X			X		X			X		X			X		X
PAH by GCMS	All	NDPs: 0 Tests: 27		X		X			X		X			X		X			X		X
pH	All	NDPs: 0 Tests: 27		X		X			X		X			X		X			X		X
Phenols by HPLC (S)	All	NDPs: 0 Tests: 27		X		X			X		X			X		X			X		X
Sample description	All	NDPs: 0 Tests: 26		X		X			X		X			X		X			X		X
Total Organic Carbon	All	NDPs: 0 Tests: 27		X		X			X		X			X		X			X		X
TPH CWG GC (S)	All	NDPs: 0 Tests: 27		X		X			X		X			X		X			X		X
VOC MS (S)	All	NDPs: 0 Tests: 27			X		X			X		X			X		X			X	

23548052	AQ26-2		1.50 - 1.50	60g VOC (ALE215)	S							x											x
				250g Amber Jar (ALE210)	S	x				x	x		x	x	x	x	x	x	x	x			
23548044	AQ26-1		0.20 - 0.20	60g VOC (ALE215)	S							x											x
				250g Amber Jar (ALE210)	S	x				x	x		x	x	x	x	x	x	x	x			
				1kg TUB with Handle (ALE260)	S		x																
23548075	AQ25-2		1.50 - 1.50	60g VOC (ALE215)	S							x											x
				250g Amber Jar (ALE210)	S	x				x	x		x	x	x	x	x	x	x	x			
23548065	AQ25-1		0.20 - 0.20	60g VOC (ALE215)	S							x											x
				250g Amber Jar (ALE210)	S	x				x	x		x	x	x	x	x	x	x	x			
				1kg TUB with Handle (ALE260)	S		x	x															
23547819	AQ24-2		1.50 - 1.50	60g VOC (ALE215)	S							x											x
				250g Amber Jar (ALE210)	S	x				x	x		x	x	x	x	x	x	x	x			
23548085	AQ24-1		0.20 - 0.20	60g VOC (ALE215)	S							x											x
				250g Amber Jar (ALE210)	S	x				x	x		x	x	x	x	x	x	x	x			
				1kg TUB with Handle (ALE260)	S		x																
23547917	AO29-2		1.50 - 1.50	60g VOC (ALE215)	S							x											x
				250g Amber Jar (ALE210)	S	x				x	x		x	x	x	x	x	x	x	x			
23547788	AO29-1		0.50 - 0.50	60g VOC (ALE215)	S							x											x
				250g Amber Jar (ALE210)	S	x				x	x		x	x	x	x	x	x	x	x			
				1kg TUB with Handle (ALE260)	S		x																
23548034	AO27-2		1.20 - 1.20	60g VOC (ALE215)	S							x											x

Validated

CERTIFICATE OF ANALYSIS

SDG:	210115-27	**Client Reference:**	P18-669	**Report Number:**	584712
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	584671

Results Legend

X Test

N No Determination Possible

Sample Types -

S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

Lab Sample No(s)				23547887	23547896		23547907			23547927			23547935			23547942			23547958		23547970
Customer Sample Reference				W168-1	W168-2		W168-3			W168-4			W168-5			W168-6			W168-7		W168-8
AGS Reference																					
Depth (m)				0.20 - 0.20	0.20 - 0.20		0.20 - 0.20			0.20 - 0.20			0.20 - 0.20			0.20 - 0.20			0.20 - 0.20		0.20 - 0.20
Container				1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)
Sample Type				S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
Ammonium Soil by Titration	All	NDPs: 0 Tests: 27			X		X			X		X			X		X			X		X
Asbestos ID in Solid Samples	All	NDPs: 0 Tests: 14		X					X					X					X			
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 27			X		X			X		X			X		X			X		X
EPH CWG GC (S)	All	NDPs: 0 Tests: 27			X		X			X		X			X		X			X		X
GRO by GC-FID (S)	All	NDPs: 0 Tests: 27				X		X			X		X			X		X			X		
Metals in solid samples by OES	All	NDPs: 0 Tests: 27			X		X			X		X			X		X			X		X
PAH by GCMS	All	NDPs: 0 Tests: 27			X		X			X		X			X		X			X		X
pH	All	NDPs: 0 Tests: 27			X		X			X		X			X		X			X		X
Phenols by HPLC (S)	All	NDPs: 0 Tests: 27			X		X			X		X			X		X			X		X
Sample description	All	NDPs: 0 Tests: 26			X		X			X		X			X		X			X		X
Total Organic Carbon	All	NDPs: 0 Tests: 27			X		X			X		X			X		X			X		X
TPH CWG GC (S)	All	NDPs: 0 Tests: 27			X		X			X		X			X		X			X		X
VOC MS (S)	All	NDPs: 0 Tests: 27				X		X			X		X			X		X			X		

23548010	W168-11		0.20 - 0.20	60g VOC (ALE215)	S					X								X
				250g Amber Jar (ALE210)	S	X		X	X		X	X	X	X		X	X	
				1kg TUB with Handle (ALE260)	S		X											
23548001	W168-10		0.20 - 0.20	60g VOC (ALE215)	S					X								X
				250g Amber Jar (ALE210)	S	X		X	X		X	X	X	X	X	X	X	
23547983	W168-9		0.20 - 0.20	60g VOC (ALE215)	S					X								X
				250g Amber Jar (ALE210)	S	X		X	X		X	X	X	X	X	X	X	
				1kg TUB with Handle (ALE260)	S		X											
23547970	W168-8		0.20 - 0.20	60g VOC (ALE215)	S					X								X

CERTIFICATE OF ANALYSIS

SDG:	210115-27	**Client Reference:**	P18-669	**Report Number:**	584712
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	584671

Sample Descriptions

Grain Sizes

very fine	<0.063mm	**fine**	0.063mm - 0.1mm	**medium**	0.1mm - 2mm	**coarse**	2mm - 10mm	**very coarse**	>10mm

Lab Sample No(s)	Customer Sample Ref.	Depth (m)	Colour	Description	Inclusions	Inclusions 2
23547855	AL24-1	0.70 - 0.70	Black	Sand	Stones	None
23547865	AL24-2	1.30 - 1.30	Grey	Gravel	Stones	None
23547873	AM33-1	0.30 - 0.30	Dark Brown	Sand	Stones	None
23547879	AM33-2	1.30 - 1.30	Dark Brown	Sand	Stones	None
23547829	AN23-1	0.20 - 0.20	Dark Brown	Loamy Sand	Stones	Vegetation
23547841	AN23-2	1.50 - 1.50	Dark Brown	Sand	Stones	None
23548024	AO27-1	0.60 - 0.60	Dark Brown	Sandy Loam	Stones	Vegetation
23548034	AO27-2	1.20 - 1.20	Grey	Sand	Stones	N/A
23547788	AO29-1	0.50 - 0.50	Dark Brown	Sandy Loam	Stones	Vegetation
23547917	AO29-2	1.50 - 1.50	Dark Brown	Sand	Stones	None
23548085	AQ24-1	0.20 - 0.20	Dark Brown	Sand	Stones	Vegetation
23547819	AQ24-2	1.50 - 1.50	Dark Brown	Sand	Stones	None
23548065	AQ25-1	0.20 - 0.20	Dark Brown	Sandy Loam	Stones	None
23548075	AQ25-2	1.50 - 1.50	Dark Brown	Sand	None	Stones
23548044	AQ26-1	0.20 - 0.20	Dark Brown	Sandy Loam	Stones	Vegetation
23548052	AQ26-2	1.50 - 1.50	Dark Brown	Sand	None	Stones
23547887	W168-1	0.20 - 0.20	Dark Brown	Loamy Sand	Stones	Vegetation
23547896	W168-2	0.20 - 0.20	Dark Brown	Loamy Sand	Vegetation	Stones
23547907	W168-3	0.20 - 0.20	Dark Brown	Silt Loam	Stones	Vegetation
23547927	W168-4	0.20 - 0.20	Dark Brown	Loamy Sand	Stones	Vegetation
23547935	W168-5	0.20 - 0.20	Dark Brown	Loamy Sand	Stones	Vegetation
23547942	W168-6	0.20 - 0.20	Dark Brown	Sandy Loam	Stones	Vegetation
23547958	W168-7	0.20 - 0.20	Dark Brown	Sandy Loam	Stones	Vegetation
23547970	W168-8	0.20 - 0.20	Dark Brown	Silt Loam	Stones	Vegetation
23547983	W168-9	0.20 - 0.20	Dark Brown	Loamy Sand	Stones	Vegetation
23548001	W168-10	0.20 - 0.20	Dark Brown	Sand	Vegetation	Stones
23548010	W168-11	0.20 - 0.20	Dark Brown	Loamy Sand	Vegetation	Tar

These descriptions are only intended to act as a cross check if sample identities are questioned, and to provide a log of sample matrices with respect to MCERTS validation. They are not intended as full geological descriptions.

We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally ocurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample.

Other coarse granular materials such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

Validated

CERTIFICATE OF ANALYSIS

SDG:	210115-27	**Client Reference:**	P18-669	**Report Number:**	584712
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	584671

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	AL24-1	AL24-2	AM33-1	AM33-2	AN23-1	AN23-2
			Depth (m)	0.70 - 0.70	1.30 - 1.30	0.30 - 0.30	1.30 - 1.30	0.20 - 0.20	1.50 - 1.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	13/01/2021	13/01/2021	13/01/2021	13/01/2021	13/01/2021	13/01/2021
			Sample Time	.	.	.	.	.	.
			Date Received	15/01/2021	15/01/2021	15/01/2021	15/01/2021	15/01/2021	15/01/2021
			SDG Ref	210115-27	210115-27	210115-27	210115-27	210115-27	210115-27
			Lab Sample No.(s)	23547855	23547865	23547873	23547879	23547829	23547841
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		15	13	8.3	8.6	5.8	8.2
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	<12 #	<12 M	<12 M	<12 M	<12 M
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 #	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 #	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 #	<0.015 M	<0.015 M	<0.015 M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 #	<0.035 M	<0.035 M	<0.035 M	<0.035 M
Soil Organic Matter (SOM)	<0.35 %	TM132		>100 #	2.76 #	1.19 #	10.3 #	3.64 #	1.11 #
pH	1 pH Units	TM133		10.4 M	11 #	12.6 M	11.8 M	12 M	12.7 M
Cyanide, Total	<1 mg/kg	TM153		<1 M	<1 #	<1 M	<1 M	<1 M	<1 M
Arsenic	<0.6 mg/kg	TM181		7.68 M	1.33 #	7.22 M	9.12 M	<6 M	<6 M
Cadmium	<0.02 mg/kg	TM181		<0.02 M	<0.02 #	<0.2 M	0.258 M	0.477 M	<0.2 M
Chromium	<0.9 mg/kg	TM181		13.1 M	7.04 #	628 M	121 M	841 M	376 M
Copper	<1.4 mg/kg	TM181		12.2 M	<1.4 #	14.5 M	23.8 M	<14 M	26.1 M
Iron	<1000 mg/kg	TM181		31600 #	12000 #	180000 #	65800 #	159000 #	139000 #
Lead	<0.7 mg/kg	TM181		18.4 M	<0.7 #	22.5 M	23.5 M	7.35 M	14.9 M
Manganese	<0.13 mg/kg	TM181		2410 M	4760 #	209000 M	5090 M	33700 M	34500 M
Mercury	<0.14 mg/kg	TM181		<0.14 M	<0.14 #	<1.4 M	<1.4 M	<1.4 M	<1.4 M
Nickel	<0.2 mg/kg	TM181		10.4 M	0.818 #	24.6 M	45.1 M	9.88 M	20.6 M
Selenium	<1 mg/kg	TM181		2.33 #	2.98 #	22.7 #	<10 #	18.6 #	24 #
Vanadium	<0.2 mg/kg	TM181		28.7 #	23.1 #	571 #	96 #	839 #	1800 #
Zinc	<1.9 mg/kg	TM181		83.8 M	10.8 #	63.9 M	86.6 M	75.2 M	51.4 M

Validated

CERTIFICATE OF ANALYSIS

SDG:	210115-27	**Client Reference:**	P18-669	**Report Number:**	584712
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	584671

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	AO27-1	AO27-2	AO29-1	AO29-2	AQ24-1	AQ24-2
			Depth (m)	0.60 - 0.60	1.20 - 1.20	0.50 - 0.50	1.50 - 1.50	0.20 - 0.20	1.50 - 1.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	13/01/2021	13/01/2021	13/01/2021	13/01/2021	13/01/2021	13/01/2021
			Sample Time	.	.	.	.	.	.
			Date Received	15/01/2021	15/01/2021	15/01/2021	15/01/2021	15/01/2021	15/01/2021
			SDG Ref	210115-27	210115-27	210115-27	210115-27	210115-27	210115-27
			Lab Sample No.(s)	23548024	23548034	23547788	23547917	23548085	23547819
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		9.3	7	7.4	6.5	16	5.5
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	<12 M	<12 M	<12 M	<12 M	<12 M
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M
Soil Organic Matter (SOM)	<0.35 %	TM132		13.6 #	2.5 #	5.14 #	20.5 #	5.65 #	1.14 #
pH	1 pH Units	TM133		11.4 M	11.9 M	8.92 M	12.6 M	10.7 M	11.8 M
Cyanide, Total	<1 mg/kg	TM153		<1 M	<1 M	<1 M	<1 M	<1 M	<1 M
Arsenic	<0.6 mg/kg	TM181		8.95 M	7.22 M	9.67 M	<6 M	<60 M	11 M
Cadmium	<0.02 mg/kg	TM181		0.893 M	<0.2 M	1.81 M	0.401 M	<2 M	<0.2 M
Chromium	<0.9 mg/kg	TM181		131 M	39.8 M	456 M	802 M	291 M	28.6 M
Copper	<1.4 mg/kg	TM181		79.3 M	<14 M	81.4 M	<14 M	<140 M	16.8 M
Iron	<1000 mg/kg	TM181		107000 #	430000 #	140000 #	140000 #	116000 #	356000 #
Lead	<0.7 mg/kg	TM181		135 M	26.3 M	165 M	7.04 M	84.8 M	17.6 M
Manganese	<0.13 mg/kg	TM181		11600 M	6230 M	23400 M	38000 M	16500 M	6350 M
Mercury	<0.14 mg/kg	TM181		<1.4 M	1.84 M	<1.4 M	<1.4 M	<14 M	<1.4 M
Nickel	<0.2 mg/kg	TM181		31.2 M	18.1 M	29.7 M	7.31 M	155 M	35.2 M
Selenium	<1 mg/kg	TM181		<10 #	<10 #	10.1 #	21.7 #	<100 #	<10 #
Vanadium	<0.2 mg/kg	TM181		396 #	325 #	419 #	681 #	696 #	235 #
Zinc	<1.9 mg/kg	TM181		764 M	191 M	531 M	44.5 M	207 M	186 M

Validated

CERTIFICATE OF ANALYSIS

SDG:	210115-27	**Client Reference:**	P18-669	**Report Number:**	584712
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	584671

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	AQ25-1	AQ25-2	AQ26-1	AQ26-2	W168-1	W168-2
			Depth (m)	0.20 - 0.20	1.50 - 1.50	0.20 - 0.20	1.50 - 1.50	0.20 - 0.20	0.20 - 0.20
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	13/01/2021	13/01/2021	13/01/2021	13/01/2021	14/01/2021	14/01/2021
			Sample Time	.	.	.	.	.	.
			Date Received	15/01/2021	15/01/2021	15/01/2021	15/01/2021	15/01/2021	15/01/2021
			SDG Ref	210115-27	210115-27	210115-27	210115-27	210115-27	210115-27
			Lab Sample No.(s)	23548065	23548075	23548044	23548052	23547887	23547896
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		24	8.2	18	6.7	13	12
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	<12 M	<12 M	<12 M	<12 M	<12 M
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 M	0.0109 M	<0.01 M	<0.01 M	<0.01 M	0.0114 M
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M	0.0115 M	0.0114 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M
Soil Organic Matter (SOM)	<0.35 %	TM132		19.1 #	1.57 #	7.38 #	0.924 #	27.9 #	26.5 #
pH	1 pH Units	TM133		9.53 M	12.7 M	9.19 M	12.7 M	9.42 M	9.7 M
Cyanide, Total	<1 mg/kg	TM153		1.06 M	<1 M	<1 M	<1 M	<1 M	<1 M
Arsenic	<0.6 mg/kg	TM181		8.52 M	<6 M	8.64 M	6.23 M	8 M	8.65 M
Cadmium	<0.02 mg/kg	TM181		1.23 M	<0.2 M	0.337 M	0.794 M	0.896 M	1.26 M
Chromium	<0.9 mg/kg	TM181		257 M	565 M	255 M	302 M	182 M	323 M
Copper	<1.4 mg/kg	TM181		25.6 M	28.5 M	19.3 M	20.4 M	30.2 M	19.5 M
Iron	<1000 mg/kg	TM181		98900 #	210000 #	86000 #	253000 #	72100 #	94900 #
Lead	<0.7 mg/kg	TM181		132 M	24.2 M	121 M	18.9 M	142 M	204 M
Manganese	<0.13 mg/kg	TM181		13100 M	49500 M	13700 M	24100 M	21000 M	15500 M
Mercury	<0.14 mg/kg	TM181		<1.4 M	<1.4 M	<1.4 M	<1.4 M	<1.4 M	<1.4 M
Nickel	<0.2 mg/kg	TM181		21.8 M	23.7 M	20.8 M	39 M	17.9 M	19.8 M
Selenium	<1 mg/kg	TM181		<10 #	27.6 #	10.7 #	<10 #	12.9 #	13.8 #
Vanadium	<0.2 mg/kg	TM181		361 #	1960 #	318 #	1300 #	270 #	357 #
Zinc	<1.9 mg/kg	TM181		446 M	55.6 M	359 M	114 M	501 M	596 M
Asbestos Quantification - Gravimetric - %	<0.001 %	TM304		0.0083 #					
Asbestos Quantification - PCOM Evaluation - %	<0.001 %	TM304		<0.001 #					
Additional Asbestos Components (Using TM048)		TM304		Chrysotile detected. #					
Analysts Comments		TM304		Fibre bundles in soil.					
Asbestos Quantification - Total - %	<0.001 %	TM304		0.0083 #					

Validated

CERTIFICATE OF ANALYSIS

SDG:	210115-27	**Client Reference:**	P18-669	**Report Number:**	584712
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	584671

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	W168-3	W168-4	W168-5	W168-6	W168-7	W168-8
			Depth (m)	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	14/01/2021	14/01/2021	14/01/2021	14/01/2021	14/01/2021	14/01/2021
			Sample Time	.	.	.	.	.	.
			Date Received	15/01/2021	15/01/2021	15/01/2021	15/01/2021	15/01/2021	15/01/2021
			SDG Ref	210115-27	210115-27	210115-27	210115-27	210115-27	210115-27
			Lab Sample No.(s)	23547907	23547927	23547935	23547942	23547958	23547970
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		12	14	12	20	11	15
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	<12 M	<12 M	<12 M	<12 M	<12 M
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 M	0.0116 M	<0.01 M	0.0126 M	<0.01 M	0.0234 M
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	0.0126 M	<0.01 M	0.0117 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M
Soil Organic Matter (SOM)	<0.35 %	TM132		27.6 #	28.1 #	19.3 #	28.8 #	24.5 #	13.3 #
pH	1 pH Units	TM133		9.15 M	9.82 M	10.2 M	9.24 M	9.65 M	9.08 M
Cyanide, Total	<1 mg/kg	TM153		<1 M	<1 M	<1 M	<1 M	<1 M	<1 M
Arsenic	<0.6 mg/kg	TM181		7.73 M	10.8 M	8.38 M	9.62 M	7.96 M	<6 M
Cadmium	<0.02 mg/kg	TM181		1.23 M	0.989 M	2.1 M	3.45 M	1.3 M	1.01 M
Chromium	<0.9 mg/kg	TM181		253 M	354 M	304 M	271 M	298 M	175 M
Copper	<1.4 mg/kg	TM181		19.8 M	28.4 M	23.9 M	28.1 M	24.1 M	17 M
Iron	<1000 mg/kg	TM181		87600 #	140000 #	124000 #	99000 #	85000 #	78100 #
Lead	<0.7 mg/kg	TM181		107 M	217 M	241 M	184 M	130 M	93.1 M
Manganese	<0.13 mg/kg	TM181		16000 M	16800 M	17100 M	12000 M	16000 M	12600 M
Mercury	<0.14 mg/kg	TM181		<1.4 M	<1.4 M	<1.4 M	<1.4 M	<1.4 M	<1.4 M
Nickel	<0.2 mg/kg	TM181		19.1 M	25.1 M	20 M	22.1 M	19.1 M	20 M
Selenium	<1 mg/kg	TM181		<10 #	13.6 #	<10 #	11.1 #	11.4 #	<10 #
Vanadium	<0.2 mg/kg	TM181		328 #	365 #	408 #	286 #	290 #	200 #
Zinc	<1.9 mg/kg	TM181		364 M	806 M	903 M	564 M	454 M	324 M

CERTIFICATE OF ANALYSIS

SDG:	210115-27	**Client Reference:**	P18-669	**Report Number:**	584712
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	584671

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	W168-9	W168-10	W168-11			
			Depth (m)	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20			
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)			
			Date Sampled	14/01/2021	14/01/2021	14/01/2021			
			Sample Time	.	.	.			
			Date Received	15/01/2021	15/01/2021	15/01/2021			
			SDG Ref	210115-27	210115-27	210115-27			
			Lab Sample No.(s)	23547983	23548001	23548010			
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		12	9.1	14			
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	<12 M	<12 M			
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 M	0.011 M	0.0117 M			
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 M	0.011 M	<0.01 M			
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M	<0.015 M			
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 M	<0.035 M			
Soil Organic Matter (SOM)	<0.35 %	TM132		23.3 #	30.9 #	30.2 #			
pH	1 pH Units	TM133		10.1 M	9.95 M	10.7 M			
Cyanide, Total	<1 mg/kg	TM153		<1 M	<1 M	<1 M			
Arsenic	<0.6 mg/kg	TM181		7.75 M	9.37 M	8.5 M			
Cadmium	<0.02 mg/kg	TM181		2.49 M	1.39 M	2.29 M			
Chromium	<0.9 mg/kg	TM181		248 M	283 M	290 M			
Copper	<1.4 mg/kg	TM181		20 M	28.2 M	21.2 M			
Iron	<1000 mg/kg	TM181		98300 #	109000 #	111000 #			
Lead	<0.7 mg/kg	TM181		314 M	200 M	255 M			
Manganese	<0.13 mg/kg	TM181		14000 M	14600 M	17400 M			
Mercury	<0.14 mg/kg	TM181		<1.4 M	<1.4 M	<1.4 M			
Nickel	<0.2 mg/kg	TM181		18.7 M	25.1 M	19.8 M			
Selenium	<1 mg/kg	TM181		<10 #	13.6 #	13.3 #			
Vanadium	<0.2 mg/kg	TM181		251 #	355 #	365 #			
Zinc	<1.9 mg/kg	TM181		987 M	645 M	940 M			

Validated

CERTIFICATE OF ANALYSIS

SDG:	210115-27	**Client Reference:**	P18-669	**Report Number:**	584712
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	584671

PAH by GCMS

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	AL24-1	AL24-2	AM33-1	AM33-2	AN23-1	AN23-2
			Depth (m)	0.70 - 0.70	1.30 - 1.30	0.30 - 0.30	1.30 - 1.30	0.20 - 0.20	1.50 - 1.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	13/01/2021	13/01/2021	13/01/2021	13/01/2021	13/01/2021	13/01/2021
			Sample Time	.	.	.	.	.	.
			Date Received	15/01/2021	15/01/2021	15/01/2021	15/01/2021	15/01/2021	15/01/2021
			SDG Ref	210115-27	210115-27	210115-27	210115-27	210115-27	210115-27
			Lab Sample No.(s)	23547855	23547865	23547873	23547879	23547829	23547841
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		83.9	88.9	88.4	89.6	88.6	91.4
Acenaphthene-d10 % recovery**	%	TM218		85.2	87.3	88.9	91.8	91.7	89.5
Phenanthrene-d10 % recovery**	%	TM218		87.7	87.5	90.1	93.3	92.4	91.3
Chrysene-d12 % recovery**	%	TM218		79.2	83.1	87.1	88.7	82	92.1
Perylene-d12 % recovery**	%	TM218		64.5	85	91.3	92.2	85	95.9
Naphthalene	<9 µg/kg	TM218		426 M	66.3 #	18.5 M	123 M	254 M	253 M
Acenaphthylene	<12 µg/kg	TM218		169 M	18.2 #	<12 M	224 M	72.9 M	58 M
Acenaphthene	<8 µg/kg	TM218		40.7 M	16.9 #	15 M	13.3 M	27.4 M	69.8 M
Fluorene	<10 µg/kg	TM218		129 M	32.3 #	<10 M	125 M	81.2 M	64.9 M
Phenanthrene	<15 µg/kg	TM218		1510 M	262 #	133 M	972 M	782 M	2300 M
Anthracene	<16 µg/kg	TM218		392 M	67.3 #	23.3 M	540 M	206 M	263 M
Fluoranthene	<17 µg/kg	TM218		3040 M	419 #	273 M	2530 M	1100 M	2060 M
Pyrene	<15 µg/kg	TM218		2420 M	420 #	204 M	1750 M	788 M	1410 M
Benz(a)anthracene	<14 µg/kg	TM218		1800 M	191 #	131 M	1270 M	382 M	718 M
Chrysene	<10 µg/kg	TM218		2000 M	202 #	179 M	1370 M	354 M	856 M
Benzo(b)fluoranthene	<15 µg/kg	TM218		2780 M	352 #	319 M	1620 M	557 M	1030 M
Benzo(k)fluoranthene	<14 µg/kg	TM218		875 M	121 #	97.9 M	537 M	185 M	421 M
Benzo(a)pyrene	<15 µg/kg	TM218		1820 M	207 #	128 M	986 M	323 M	630 M
Indeno(1,2,3-cd)pyrene	<18 µg/kg	TM218		1440 M	190 #	167 M	813 M	301 M	515 M
Dibenzo(a,h)anthracene	<23 µg/kg	TM218		345 M	38.5 #	33.7 M	172 M	42.8 M	92.3 M
Benzo(g,h,i)perylene	<24 µg/kg	TM218		1410 M	170 #	147 M	723 M	249 M	489 M
PAH, Total Detected USEPA 16	<118 µg/kg	TM218		20600	2770	1870	13800	5710	11200

Validated

CERTIFICATE OF ANALYSIS

SDG:	210115-27	**Client Reference:**	P18-669	**Report Number:**	584712
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	584671

PAH by GCMS

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	AO27-1	AO27-2	AO29-1	AO29-2	AQ24-1	AQ24-2
			Depth (m)	0.60 - 0.60	1.20 - 1.20	0.50 - 0.50	1.50 - 1.50	0.20 - 0.20	1.50 - 1.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	13/01/2021	13/01/2021	13/01/2021	13/01/2021	13/01/2021	13/01/2021
			Sample Time	.	.	.	.	.	.
			Date Received	15/01/2021	15/01/2021	15/01/2021	15/01/2021	15/01/2021	15/01/2021
			SDG Ref	210115-27	210115-27	210115-27	210115-27	210115-27	210115-27
			Lab Sample No.(s)	23548024	23548034	23547788	23547917	23548085	23547819
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		88.5	91.1	90.9	81.7	84.7	84.7
Acenaphthene-d10 % recovery**	%	TM218		91.7	90.9	92.2	88.4	86.6	86.8
Phenanthrene-d10 % recovery**	%	TM218		94.3	90.4	93	91.3	88.3	89.6
Chrysene-d12 % recovery**	%	TM218		87.8	85.7	89.6	81	80	82
Perylene-d12 % recovery**	%	TM218		88.6	87.5	92.9	78.7	81.8	85.3
Naphthalene	<9 µg/kg	TM218		1330 M	311 M	92.3 M	134 M	866 M	416 M
Acenaphthylene	<12 µg/kg	TM218		508 M	54.7 M	40.1 M	14.7 M	279 M	88.9 M
Acenaphthene	<8 µg/kg	TM218		112 M	17.8 M	43.5 M	11.6 M	54.3 M	13.6 M
Fluorene	<10 µg/kg	TM218		419 M	22 M	47.2 M	10.8 M	227 M	63.7 M
Phenanthrene	<15 µg/kg	TM218		3880 M	308 M	366 M	266 M	1930 M	476 M
Anthracene	<16 µg/kg	TM218		944 M	70.6 M	88.6 M	32.3 M	418 M	102 M
Fluoranthene	<17 µg/kg	TM218		6780 M	544 M	749 M	338 M	3040 M	732 M
Pyrene	<15 µg/kg	TM218		4880 M	434 M	661 M	277 M	2250 M	558 M
Benz(a)anthracene	<14 µg/kg	TM218		2890 M	256 M	505 M	181 M	1330 M	319 M
Chrysene	<10 µg/kg	TM218		2690 M	255 M	591 M	206 M	1150 M	292 M
Benzo(b)fluoranthene	<15 µg/kg	TM218		4210 M	455 M	910 M	350 M	2100 M	495 M
Benzo(k)fluoranthene	<14 µg/kg	TM218		1350 M	138 M	375 M	141 M	682 M	171 M
Benzo(a)pyrene	<15 µg/kg	TM218		2900 M	267 M	609 M	173 M	1360 M	300 M
Indeno(1,2,3-cd)pyrene	<18 µg/kg	TM218		2450 M	232 M	562 M	143 M	1180 M	270 M
Dibenzo(a,h)anthracene	<23 µg/kg	TM218		368 M	41 M	111 M	<23 M	220 M	53.2 M
Benzo(g,h,i)perylene	<24 µg/kg	TM218		2070 M	209 M	580 M	155 M	1090 M	250 M
PAH, Total Detected USEPA 16	<118 µg/kg	TM218		37800	3620	6330	2430	18200	4600

Validated

CERTIFICATE OF ANALYSIS

SDG:	210115-27	**Client Reference:**	P18-669	**Report Number:**	584712
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	584671

PAH by GCMS

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	AQ25-1	AQ25-2	AQ26-1	AQ26-2	W168-1	W168-2
			Depth (m)	0.20 - 0.20	1.50 - 1.50	0.20 - 0.20	1.50 - 1.50	0.20 - 0.20	0.20 - 0.20
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	13/01/2021	13/01/2021	13/01/2021	13/01/2021	14/01/2021	14/01/2021
			Sample Time	.	.	.	.	.	.
			Date Received	15/01/2021	15/01/2021	15/01/2021	15/01/2021	15/01/2021	15/01/2021
			SDG Ref	210115-27	210115-27	210115-27	210115-27	210115-27	210115-27
			Lab Sample No.(s)	23548065	23548075	23548044	23548052	23547887	23547896
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		86	88.5	85.7	88.6	87.5	83.8
Acenaphthene-d10 % recovery**	%	TM218		85.8	90.5	84.9	90.5	89.8	88.1
Phenanthrene-d10 % recovery**	%	TM218		85.2	93	83.1	91.9	91.5	88.7
Chrysene-d12 % recovery**	%	TM218		80.4	89.1	78	89.8	81.6	78.9
Perylene-d12 % recovery**	%	TM218		76.7	92.8	74.9	94.2	78.8	75.5
Naphthalene	<9 µg/kg	TM218		7620 M	1230 M	3890 M	198 M	3280 M	3990 M
Acenaphthylene	<12 µg/kg	TM218		1880 M	830 M	833 M	139 M	977 M	1150 M
Acenaphthene	<8 µg/kg	TM218		264 M	195 M	209 M	135 M	200 M	191 M
Fluorene	<10 µg/kg	TM218		1690 M	1050 M	761 M	146 M	797 M	780 M
Phenanthrene	<15 µg/kg	TM218		13900 M	10400 M	6660 M	3290 M	5600 M	5030 M
Anthracene	<16 µg/kg	TM218		3190 M	1950 M	1420 M	462 M	1690 M	1850 M
Fluoranthene	<17 µg/kg	TM218		20800 M	11900 M	11100 M	3380 M	9570 M	9340 M
Pyrene	<15 µg/kg	TM218		14200 M	8110 M	8060 M	2390 M	6840 M	6890 M
Benz(a)anthracene	<14 µg/kg	TM218		7600 M	4790 M	4410 M	1650 M	4800 M	4770 M
Chrysene	<10 µg/kg	TM218		6160 M	4700 M	3820 M	1680 M	3810 M	3880 M
Benzo(b)fluoranthene	<15 µg/kg	TM218		10600 M	5930 M	6830 M	2290 M	6570 M	6860 M
Benzo(k)fluoranthene	<14 µg/kg	TM218		3740 M	2160 M	2300 M	774 M	2310 M	2390 M
Benzo(a)pyrene	<15 µg/kg	TM218		6210 M	4090 M	3970 M	1330 M	3990 M	4170 M
Indeno(1,2,3-cd)pyrene	<18 µg/kg	TM218		5250 M	3430 M	3700 M	1150 M	3370 M	3590 M
Dibenzo(a,h)anthracene	<23 µg/kg	TM218		676 M	686 M	454 M	261 M	575 M	623 M
Benzo(g,h,i)perylene	<24 µg/kg	TM218		4230 M	2930 M	3040 M	1010 M	2610 M	2720 M
PAH, Total Detected USEPA 16	<118 µg/kg	TM218		108000	64400	61400	20300	57000	58200

Validated

CERTIFICATE OF ANALYSIS

SDG:	210115-27	**Client Reference:**	P18-669	**Report Number:**	584712
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	584671

PAH by GCMS

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	W168-3	W168-4	W168-5	W168-6	W168-7	W168-8
			Depth (m)	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	14/01/2021	14/01/2021	14/01/2021	14/01/2021	14/01/2021	14/01/2021
			Sample Time	.	.	.	.	.	.
			Date Received	15/01/2021	15/01/2021	15/01/2021	15/01/2021	15/01/2021	15/01/2021
			SDG Ref	210115-27	210115-27	210115-27	210115-27	210115-27	210115-27
			Lab Sample No.(s)	23547907	23547927	23547935	23547942	23547958	23547970
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		90	84.7	81.8	86.4	80.8	86.6
Acenaphthene-d10 % recovery**	%	TM218		88.9	86.3	81.7	82.3	87.6	82.5
Phenanthrene-d10 % recovery**	%	TM218		91.3	88	87	81.2	91.4	81.9
Chrysene-d12 % recovery**	%	TM218		89.1	79.3	75	75.1	79.5	79.8
Perylene-d12 % recovery**	%	TM218		89.1	77.1	74.4	74.3	73.9	78.1
Naphthalene	<9 µg/kg	TM218		3190 M	4790 M	4390 M	4170 M	4380 M	2180 M
Acenaphthylene	<12 µg/kg	TM218		1490 M	1260 M	1960 M	4800 M	1040 M	1180 M
Acenaphthene	<8 µg/kg	TM218		158 M	255 M	385 M	868 M	221 M	118 M
Fluorene	<10 µg/kg	TM218		903 M	1060 M	1940 M	10300 M	864 M	674 M
Phenanthrene	<15 µg/kg	TM218		6320 M	7170 M	16300 M	47400 M	5590 M	4750 M
Anthracene	<16 µg/kg	TM218		<16 M	3420 M	5230 M	8330 M	1810 M	1510 M
Fluoranthene	<17 µg/kg	TM218		15300 M	13100 M	26500 M	43400 M	9670 M	9990 M
Pyrene	<15 µg/kg	TM218		10900 M	9310 M	18000 M	26900 M	6960 M	7310 M
Benz(a)anthracene	<14 µg/kg	TM218		7830 M	6280 M	10800 M	15400 M	4450 M	4990 M
Chrysene	<10 µg/kg	TM218		7160 M	5610 M	9500 M	16400 M	3790 M	4850 M
Benzo(b)fluoranthene	<15 µg/kg	TM218		10900 M	9250 M	14600 M	17800 M	6520 M	7170 M
Benzo(k)fluoranthene	<14 µg/kg	TM218		3550 M	3030 M	4850 M	5620 M	2240 M	2270 M
Benzo(a)pyrene	<15 µg/kg	TM218		7170 M	5260 M	8700 M	11100 M	3760 M	4420 M
Indeno(1,2,3-cd)pyrene	<18 µg/kg	TM218		5310 M	4270 M	6950 M	8280 M	2850 M	3570 M
Dibenzo(a,h)anthracene	<23 µg/kg	TM218		1180 M	694 M	1450 M	2030 M	489 M	735 M
Benzo(g,h,i)perylene	<24 µg/kg	TM218		4730 M	3500 M	5800 M	6960 M	2400 M	3150 M
PAH, Total Detected USEPA 16	<118 µg/kg	TM218		86000	78300	137000	230000	57000	58900

Validated

CERTIFICATE OF ANALYSIS

SDG:	210115-27	**Client Reference:**	P18-669	**Report Number:**	584712
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	584671

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	W168-9	W168-10	W168-11			
			Depth (m)	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20			
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)			
			Date Sampled	14/01/2021	14/01/2021	14/01/2021			
			Sample Time	.	.	.			
			Date Received	15/01/2021	15/01/2021	15/01/2021			
			SDG Ref	210115-27	210115-27	210115-27			
			Lab Sample No.(s)	23547983	23548001	23548010			
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		78.6	88.6	82.1			
Acenaphthene-d10 % recovery**	%	TM218		85.6	90.8	80.3			
Phenanthrene-d10 % recovery**	%	TM218		85.9	92.5	83.5			
Chrysene-d12 % recovery**	%	TM218		77.1	88.1	72.6			
Perylene-d12 % recovery**	%	TM218		70.7	84.6	70.8			
Naphthalene	<9 µg/kg	TM218		4520 M	5430 M	4000 M			
Acenaphthylene	<12 µg/kg	TM218		1690 M	1570 M	1250 M			
Acenaphthene	<8 µg/kg	TM218		272 M	213 M	308 M			
Fluorene	<10 µg/kg	TM218		1230 M	1210 M	1300 M			
Phenanthrene	<15 µg/kg	TM218		8820 M	10800 M	9800 M			
Anthracene	<16 µg/kg	TM218		3780 M	3820 M	3220 M			
Fluoranthene	<17 µg/kg	TM218		18000 M	17500 M	15100 M			
Pyrene	<15 µg/kg	TM218		12800 M	12400 M	11000 M			
Benz(a)anthracene	<14 µg/kg	TM218		8290 M	7860 M	7860 M			
Chrysene	<10 µg/kg	TM218		7010 M	6820 M	6930 M			
Benzo(b)fluoranthene	<15 µg/kg	TM218		11300 M	10300 M	10700 M			
Benzo(k)fluoranthene	<14 µg/kg	TM218		4270 M	3230 M	3640 M			
Benzo(a)pyrene	<15 µg/kg	TM218		6560 M	6260 M	6690 M			
Indeno(1,2,3-cd)pyrene	<18 µg/kg	TM218		4730 M	4900 M	5090 M			
Dibenzo(a,h)anthracene	<23 µg/kg	TM218		745 M	1160 M	1170 M			
Benzo(g,h,i)perylene	<24 µg/kg	TM218		4330 M	4090 M	4270 M			
PAH, Total Detected USEPA 16	<118 µg/kg	TM218		98300	97600	92300			

Validated

CERTIFICATE OF ANALYSIS

SDG:	210115-27	**Client Reference:**	P18-669	**Report Number:**	584712
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	584671

TPH CWG (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	AL24-1	AL24-2	AM33-1	AM33-2	AN23-1	AN23-2
			Depth (m)	0.70 - 0.70	1.30 - 1.30	0.30 - 0.30	1.30 - 1.30	0.20 - 0.20	1.50 - 1.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	13/01/2021	13/01/2021	13/01/2021	13/01/2021	13/01/2021	13/01/2021
			Sample Time	.	.	.	.	.	.
			Date Received	15/01/2021	15/01/2021	15/01/2021	15/01/2021	15/01/2021	15/01/2021
			SDG Ref	210115-27	210115-27	210115-27	210115-27	210115-27	210115-27
			Lab Sample No.(s)	23547855	23547865	23547873	23547879	23547829	23547841
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		89.3	115	113	84.8	95.4	103
Aliphatics >C5-C6	<10 µg/kg	TM089		<10	<10	<10	<10	<10	<10
Aliphatics >C6-C8	<10 µg/kg	TM089		11.8	<10	<10	16.4	<10	22.9
Aliphatics >C8-C10	<10 µg/kg	TM089		10.6	<10	<10	16.4	<10	29.4
Aliphatics >C10-C12	<1000 µg/kg	TM414		<1000	<1000	<1000	<1000	<1000	<1000
Aliphatics >C12-C16	<1000 µg/kg	TM414		<1000	<1000	1260	<1000	<1000	2920
Aliphatics >C16-C21	<1000 µg/kg	TM414		11400	<1000	9880	3970	3070	14000
Aliphatics >C21-C35	<1000 µg/kg	TM414		5320	4980	62700	8720	22800	108000
Aliphatics >C35-C44	<1000 µg/kg	TM414		<1000	<1000	16400	1080	7170	52800
Total Aliphatics >C10-C44	<5000 µg/kg	TM414		17000	5850	90200	14000	33600	178000
Total Aliphatics & Aromatics >C10-C44	<10000 µg/kg	TM414		109000	10200	106000	52200	51800	198000
Aromatics >EC5-EC7	<10 µg/kg	TM089		<10	<10	<10	<10	<10	<10
Aromatics >EC7-EC8	<10 µg/kg	TM089		<10	<10	<10	<10	<10	<10
Aromatics >EC8-EC10	<10 µg/kg	TM089		<10	<10	<10	10.9	<10	19.6
Aromatics > EC10-EC12	<1000 µg/kg	TM414		<1000	<1000	<1000	<1000	<1000	<1000
Aromatics > EC12-EC16	<1000 µg/kg	TM414		<1000	<1000	<1000	<1000	<1000	<1000
Aromatics > EC16-EC21	<1000 µg/kg	TM414		14500	1030	<1000	7120	4670	4730
Aromatics > EC21-EC35	<1000 µg/kg	TM414		67000	2270	13600	25800	11700	12500
Aromatics >EC35-EC44	<1000 µg/kg	TM414		9070	<1000	<1000	5020	<1000	1590
Aromatics > EC40-EC44	<1000 µg/kg	TM414		<1000	<1000	<1000	1370	<1000	<1000
Total Aromatics > EC10-EC44	<5000 µg/kg	TM414		91800	<5000	15500	38300	18200	19700
Total Aliphatics & Aromatics >C5-C44	<10000 µg/kg	TM414		109000	<10000	106000	52300	51800	198000
Total Aliphatics >C5-C10	<50 µg/kg	TM089		<50	<50	<50	<50	<50	52.3
Total Aromatics >EC5-EC10	<50 µg/kg	TM089		<50	<50	<50	<50	<50	<50
GRO >C5-C10	<20 µg/kg	TM089		<20	<20	<20	<20	<20	52.3

Validated

CERTIFICATE OF ANALYSIS

SDG:	210115-27	**Client Reference:**	P18-669	**Report Number:**	584712
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	584671

TPH CWG (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	AO27-1	AO27-2	AO29-1	AO29-2	AQ24-1	AQ24-2
			Depth (m)	0.60 - 0.60	1.20 - 1.20	0.50 - 0.50	1.50 - 1.50	0.20 - 0.20	1.50 - 1.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	13/01/2021	13/01/2021	13/01/2021	13/01/2021	13/01/2021	13/01/2021
			Sample Time	.	.	.	.	.	.
			Date Received	15/01/2021	15/01/2021	15/01/2021	15/01/2021	15/01/2021	15/01/2021
			SDG Ref	210115-27	210115-27	210115-27	210115-27	210115-27	210115-27
			Lab Sample No.(s)	23548024	23548034	23547788	23547917	23548085	23547819
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		72.6	105	80.4	103	110	95.8
Aliphatics >C5-C6	<10 µg/kg	TM089		<10	<10	<10	<10	18	<10
Aliphatics >C6-C8	<10 µg/kg	TM089		<10	<10	<10	35.3	82.8	21.2
Aliphatics >C8-C10	<10 µg/kg	TM089		<10	<10	<10	51.4	116	37
Aliphatics >C10-C12	<1000 µg/kg	TM414		<1000	<1000	<1000	<1000	18800	<1000
Aliphatics >C12-C16	<1000 µg/kg	TM414		1250	1230	<1000	5390	161000	13400
Aliphatics >C16-C21	<1000 µg/kg	TM414		6110	51200	5810	17300	179000	22500
Aliphatics >C21-C35	<1000 µg/kg	TM414		21100	9890	16500	53300	150000	20200
Aliphatics >C35-C44	<1000 µg/kg	TM414		7780	<1000	1940	22700	16400	2850
Total Aliphatics >C10-C44	<5000 µg/kg	TM414		36200	63000	24500	98700	524000	58900
Total Aliphatics & Aromatics >C10-C44	<10000 µg/kg	TM414		137000	73000	89300	115000	718000	73000
Aromatics >EC5-EC7	<10 µg/kg	TM089		<10	<10	<10	<10	<10	<10
Aromatics >EC7-EC8	<10 µg/kg	TM089		<10	<10	<10	<10	<10	<10
Aromatics >EC8-EC10	<10 µg/kg	TM089		<10	<10	<10	34.2	78	24.3
Aromatics > EC10-EC12	<1000 µg/kg	TM414		<1000	<1000	<1000	1040	1740	<1000
Aromatics > EC12-EC16	<1000 µg/kg	TM414		1220	<1000	<1000	1950	32100	3550
Aromatics > EC16-EC21	<1000 µg/kg	TM414		18700	3820	4900	2360	44400	3220
Aromatics > EC21-EC35	<1000 µg/kg	TM414		70800	4990	50900	9400	104000	6030
Aromatics >EC35-EC44	<1000 µg/kg	TM414		9270	<1000	8570	1420	10900	<1000
Aromatics > EC40-EC44	<1000 µg/kg	TM414		1720	<1000	1750	<1000	2170	<1000
Total Aromatics > EC10-EC44	<5000 µg/kg	TM414		101000	9990	64800	16200	194000	14100
Total Aliphatics & Aromatics >C5-C44	<10000 µg/kg	TM414		137000	73000	89300	115000	718000	73100
Total Aliphatics >C5-C10	<50 µg/kg	TM089		<50	<50	<50	86.7	217	58.2
Total Aromatics >EC5-EC10	<50 µg/kg	TM089		<50	<50	<50	<50	78	<50
GRO >C5-C10	<20 µg/kg	TM089		<20	<20	<20	86.7	295	58.2

Validated

CERTIFICATE OF ANALYSIS

SDG:	210115-27	**Client Reference:**	P18-669	**Report Number:**	584712
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	584671

TPH CWG (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	AQ25-1	AQ25-2	AQ26-1	AQ26-2	W168-1	W168-2
			Depth (m)	0.20 - 0.20	1.50 - 1.50	0.20 - 0.20	1.50 - 1.50	0.20 - 0.20	0.20 - 0.20
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	13/01/2021	13/01/2021	13/01/2021	13/01/2021	14/01/2021	14/01/2021
			Sample Time	.	.	.	.	.	.
			Date Received	15/01/2021	15/01/2021	15/01/2021	15/01/2021	15/01/2021	15/01/2021
			SDG Ref	210115-27	210115-27	210115-27	210115-27	210115-27	210115-27
			Lab Sample No.(s)	23548065	23548075	23548044	23548052	23547887	23547896
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		66.9 4	95.3	85.7	101	36.2 4	30.2 4
Aliphatics >C5-C6	<10 µg/kg	TM089		43.2 4	<10	11	<10	<10 4	<10 4
Aliphatics >C6-C8	<10 µg/kg	TM089		83.8 4	<10	45.1	<10	28.8 4	14.8 4
Aliphatics >C8-C10	<10 µg/kg	TM089		148 4	<10	45.1	<10	46 4	11.4 4
Aliphatics >C10-C12	<1000 µg/kg	TM414		<1000	<1000	<1000	<1000	<1000	<1000
Aliphatics >C12-C16	<1000 µg/kg	TM414		3270	1440	1960	<1000	1980	2630
Aliphatics >C16-C21	<1000 µg/kg	TM414		11000	9490	6420	7270	13800	12100
Aliphatics >C21-C35	<1000 µg/kg	TM414		46000	64500	20900	51100	25200	33300
Aliphatics >C35-C44	<1000 µg/kg	TM414		13300	32900	4250	18200	4530	9690
Total Aliphatics >C10-C44	<5000 µg/kg	TM414		74500	108000	33600	77400	45600	58300
Total Aliphatics & Aromatics >C10-C44	<10000 µg/kg	TM414		447000	158000	210000	106000	421000	256000
Aromatics >EC5-EC7	<10 µg/kg	TM089		<10 4	<10	<10	<10	<10 4	<10 4
Aromatics >EC7-EC8	<10 µg/kg	TM089		<10 4	<10	<10	<10	<10 4	<10 4
Aromatics >EC8-EC10	<10 µg/kg	TM089		98.3 4	<10	30.5	<10	29.9 4	<10 4
Aromatics > EC10-EC12	<1000 µg/kg	TM414		12200	<1000	2820	<1000	5060	5160
Aromatics > EC12-EC16	<1000 µg/kg	TM414		14300	1080	3480	<1000	16900	7030
Aromatics > EC16-EC21	<1000 µg/kg	TM414		104000	10000	30300	6190	128000	39600
Aromatics > EC21-EC35	<1000 µg/kg	TM414		218000	31300	125000	19600	195000	127000
Aromatics >EC35-EC44	<1000 µg/kg	TM414		24100	6460	15200	2600	29900	18900
Aromatics > EC40-EC44	<1000 µg/kg	TM414		5410	1250	2070	<1000	3630	4130
Total Aromatics > EC10-EC44	<5000 µg/kg	TM414		372000	49200	177000	28800	375000	197000
Total Aliphatics & Aromatics >C5-C44	<10000 µg/kg	TM414		447000	158000	211000	106000	421000	256000
Total Aliphatics >C5-C10	<50 µg/kg	TM089		275 4	<50	101	<50	74.8 4	<50 4
Total Aromatics >EC5-EC10	<50 µg/kg	TM089		98.3 4	<50	<50	<50	<50 4	<50 4
GRO >C5-C10	<20 µg/kg	TM089		373 4	<20	101	<20	74.8 4	<20 4

Validated

CERTIFICATE OF ANALYSIS

SDG:	210115-27	**Client Reference:**	P18-669	**Report Number:**	584712
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	584671

TPH CWG (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	W168-3	W168-4	W168-5	W168-6	W168-7	W168-8
			Depth (m)	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	14/01/2021	14/01/2021	14/01/2021	14/01/2021	14/01/2021	14/01/2021
			Sample Time	.	.	.	.	.	.
			Date Received	15/01/2021	15/01/2021	15/01/2021	15/01/2021	15/01/2021	15/01/2021
			SDG Ref	210115-27	210115-27	210115-27	210115-27	210115-27	210115-27
			Lab Sample No.(s)	23547907	23547927	23547935	23547942	23547958	23547970
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		49.2 4	49.1 4	36.4 4	39.5 4	31.1 4	50.9 4
Aliphatics >C5-C6	<10 µg/kg	TM089		<10 4	<10 4	<10 4	<10 4	<10 4	<10 4
Aliphatics >C6-C8	<10 µg/kg	TM089		<10 4	32.5 4	13.7 4	<10 4	14.6 4	<10 4
Aliphatics >C8-C10	<10 µg/kg	TM089		<10 4	34.8 4	12.5 4	<10 4	13.4 4	<10 4
Aliphatics >C10-C12	<1000 µg/kg	TM414		<1000	<1000	1050	<1000	1070	<1000
Aliphatics >C12-C16	<1000 µg/kg	TM414		<1000	3750	4140	2460	3710	<1000
Aliphatics >C16-C21	<1000 µg/kg	TM414		1290	14200	20900	14500	15600	3110
Aliphatics >C21-C35	<1000 µg/kg	TM414		4110	36200	45200	31100	43800	10600
Aliphatics >C35-C44	<1000 µg/kg	TM414		<1000	13200	12200	6550	11000	1840
Total Aliphatics >C10-C44	<5000 µg/kg	TM414		6350	68000	83500	55000	75200	16900
Total Aliphatics & Aromatics >C10-C44	<10000 µg/kg	TM414		159000	391000	309000	303000	315000	164000
Aromatics >EC5-EC7	<10 µg/kg	TM089		<10 4	<10 4	<10 4	<10 4	<10 4	<10 4
Aromatics >EC7-EC8	<10 µg/kg	TM089		<10 4	<10 4	<10 4	<10 4	<10 4	<10 4
Aromatics >EC8-EC10	<10 µg/kg	TM089		<10 4	23.2 4	<10 4	<10 4	<10 4	<10 4
Aromatics > EC10-EC12	<1000 µg/kg	TM414		2510	5560	5780	5200	8120	2670
Aromatics > EC12-EC16	<1000 µg/kg	TM414		3860	10400	8860	7720	9860	6080
Aromatics > EC16-EC21	<1000 µg/kg	TM414		32900	81300	49100	48500	49100	27000
Aromatics > EC21-EC35	<1000 µg/kg	TM414		98800	201000	143000	163000	143000	92900
Aromatics >EC35-EC44	<1000 µg/kg	TM414		14500	24800	18300	23700	29200	18700
Aromatics > EC40-EC44	<1000 µg/kg	TM414		1790	5510	3370	2940	5010	2350
Total Aromatics > EC10-EC44	<5000 µg/kg	TM414		153000	323000	225000	248000	240000	147000
Total Aliphatics & Aromatics >C5-C44	<10000 µg/kg	TM414		159000	392000	309000	303000	315000	164000
Total Aliphatics >C5-C10	<50 µg/kg	TM089		<50 4	67.3 4	<50 4	<50 4	<50 4	<50 4
Total Aromatics >EC5-EC10	<50 µg/kg	TM089		<50 4	<50 4	<50 4	<50 4	<50 4	<50 4
GRO >C5-C10	<20 µg/kg	TM089		<20 4	67.3 4	<20 4	<20 4	<20 4	<20 4

CERTIFICATE OF ANALYSIS

SDG:	210115-27	**Client Reference:**	P18-669	**Report Number:**	584712
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	584671

TPH CWG (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	W168-9	W168-10	W168-11			
			Depth (m)	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20			
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)			
			Date Sampled	14/01/2021	14/01/2021	14/01/2021			
			Sample Time	.	.	.			
			Date Received	15/01/2021	15/01/2021	15/01/2021			
			SDG Ref	210115-27	210115-27	210115-27			
			Lab Sample No.(s)	23547983	23548001	23548010			
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		36.1 4	47.9 4	45.2 4			
Aliphatics >C5-C6	<10 µg/kg	TM089		<10 4	14.3 4	<10 4			
Aliphatics >C6-C8	<10 µg/kg	TM089		21.7 4	29.7 4	32.8 4			
Aliphatics >C8-C10	<10 µg/kg	TM089		22.8 4	24.2 4	30.4 4			
Aliphatics >C10-C12	<1000 µg/kg	TM414		<1000	1000	<1000			
Aliphatics >C12-C16	<1000 µg/kg	TM414		4480	4680	4010			
Aliphatics >C16-C21	<1000 µg/kg	TM414		18300	25800	26900			
Aliphatics >C21-C35	<1000 µg/kg	TM414		42100	50200	50800			
Aliphatics >C35-C44	<1000 µg/kg	TM414		12200	14900	10200			
Total Aliphatics >C10-C44	<5000 µg/kg	TM414		78000	96700	92400			
Total Aliphatics & Aromatics >C10-C44	<10000 µg/kg	TM414		329000	295000	363000			
Aromatics >EC5-EC7	<10 µg/kg	TM089		<10 4	<10 4	<10 4			
Aromatics >EC7-EC8	<10 µg/kg	TM089		<10 4	<10 4	<10 4			
Aromatics >EC8-EC10	<10 µg/kg	TM089		14.8 4	16.5 4	19.9 4			
Aromatics > EC10-EC12	<1000 µg/kg	TM414		6170	5970	7070			
Aromatics > EC12-EC16	<1000 µg/kg	TM414		8870	9030	10300			
Aromatics > EC16-EC21	<1000 µg/kg	TM414		52600	40600	60300			
Aromatics > EC21-EC35	<1000 µg/kg	TM414		163000	125000	169000			
Aromatics >EC35-EC44	<1000 µg/kg	TM414		20400	17900	24200			
Aromatics > EC40-EC44	<1000 µg/kg	TM414		2990	2720	3480			
Total Aromatics > EC10-EC44	<5000 µg/kg	TM414		251000	198000	271000			
Total Aliphatics & Aromatics >C5-C44	<10000 µg/kg	TM414		329000	295000	363000			
Total Aliphatics >C5-C10	<50 µg/kg	TM089		<50 4	68.2 4	63.2 4			
Total Aromatics >EC5-EC10	<50 µg/kg	TM089		<50 4	<50 4	<50 4			
GRO >C5-C10	<20 µg/kg	TM089		<20 4	68.2 4	63.2 4			

CERTIFICATE OF ANALYSIS

SDG:	210115-27	**Client Reference:**	P18-669	**Report Number:**	584712
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	584671

VOC MS (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	AL24-1	AL24-2	AM33-1	AM33-2	AN23-1	AN23-2
			Depth (m)	0.70 - 0.70	1.30 - 1.30	0.30 - 0.30	1.30 - 1.30	0.20 - 0.20	1.50 - 1.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	13/01/2021	13/01/2021	13/01/2021	13/01/2021	13/01/2021	13/01/2021
			Sample Time	.	.	.	.	.	.
			Date Received	15/01/2021	15/01/2021	15/01/2021	15/01/2021	15/01/2021	15/01/2021
			SDG Ref	210115-27	210115-27	210115-27	210115-27	210115-27	210115-27
			Lab Sample No.(s)	23547855	23547865	23547873	23547879	23547829	23547841
			AGS Reference						
Dibromofluoromethane**	%	TM116		113	110	104	106	108	103
Toluene-d8**	%	TM116		98.4	98.8	97.3	96.3	97.8	97.6
4-Bromofluorobenzene**	%	TM116		92.5	98.3	95.2	93.8	97.2	97.5
Methyl Tertiary Butyl Ether	<10 µg/kg	TM116		<200 M	<200 #	<200 M	<200 M	<200 M	<200 M
Benzene	<9 µg/kg	TM116		<180 M	<180 #	<180 M	<180 M	<180 M	<180 M
Toluene	<7 µg/kg	TM116		<140 M	<140 #	<140 M	<140 M	<140 M	<140 M
Ethylbenzene	<4 µg/kg	TM116		<80 M	<80 #	<80 M	<80 M	<80 M	<80 M
p/m-Xylene	<10 µg/kg	TM116		<200 #	<200 #	<200 #	<200 #	<200 #	<200 #
o-Xylene	<10 µg/kg	TM116		<200 M	<200 #	<200 M	<200 M	<200 M	<200 M
Naphthalene	<13 µg/kg	TM116		<260 M	<260 #	<260 M	<260 M	<260 M	<260 M
Sum of Detected Xylenes	<0.02 mg/kg	TM116		<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Sum of BTEX	<40 µg/kg	TM116		<800	<800	<800	<800	<800	<800

CERTIFICATE OF ANALYSIS

SDG:	210115-27	**Client Reference:**	P18-669	**Report Number:**	584712
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	584671

VOC MS (S)

Results Legend	
#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	AO27-1	AO27-2	AO29-1	AO29-2	AQ24-1	AQ24-2
			Depth (m)	0.60 - 0.60	1.20 - 1.20	0.50 - 0.50	1.50 - 1.50	0.20 - 0.20	1.50 - 1.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	13/01/2021	13/01/2021	13/01/2021	13/01/2021	13/01/2021	13/01/2021
			Sample Time	.	.	.	.	.	.
			Date Received	15/01/2021	15/01/2021	15/01/2021	15/01/2021	15/01/2021	15/01/2021
			SDG Ref	210115-27	210115-27	210115-27	210115-27	210115-27	210115-27
			Lab Sample No.(s)	23548024	23548034	23547788	23547917	23548085	23547819
			AGS Reference						
Dibromofluoromethane**	%	TM116		108	109	110	112	103	106
Toluene-d8**	%	TM116		99.2	98.6	99.1	99.2	96.3	103
4-Bromofluorobenzene**	%	TM116		93.3	99.5	95.4	96.7	87.9	95.7
Methyl Tertiary Butyl Ether	<10 µg/kg	TM116		<200 M	<200 M	<200 M	<200 M	<200 M	<200 M
Benzene	<9 µg/kg	TM116		<180 M	<180 M	<180 M	<180 M	<180 M	<180 M
Toluene	<7 µg/kg	TM116		<140 M	<140 M	<140 M	<140 M	<140 M	<140 M
Ethylbenzene	<4 µg/kg	TM116		<80 M	<80 M	<80 M	<80 M	<80 M	<80 M
p/m-Xylene	<10 µg/kg	TM116		<200 #	<200 #	<200 #	<200 #	<200 #	<200 #
o-Xylene	<10 µg/kg	TM116		<200 M	<200 M	<200 M	<200 M	<200 M	<200 M
Naphthalene	<13 µg/kg	TM116		<260 M	<260 M	<260 M	<260 M	1200 M	<260 M
Sum of Detected Xylenes	<0.02 mg/kg	TM116		<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Sum of BTEX	<40 µg/kg	TM116		<800	<800	<800	<800	<800	<800

CERTIFICATE OF ANALYSIS

SDG:	210115-27	**Client Reference:**	P18-669	**Report Number:**	584712
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	584671

VOC MS (S)

Results Legend

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aq	Aqueous / settled sample.
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tot.unfilt	Total / unfiltered sample.
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**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	AQ25-1	AQ25-2	AQ26-1	AQ26-2	W168-1	W168-2
			Depth (m)	0.20 - 0.20	1.50 - 1.50	0.20 - 0.20	1.50 - 1.50	0.20 - 0.20	0.20 - 0.20
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	13/01/2021	13/01/2021	13/01/2021	13/01/2021	14/01/2021	14/01/2021
			Sample Time	.	.	.	.	.	.
			Date Received	15/01/2021	15/01/2021	15/01/2021	15/01/2021	15/01/2021	15/01/2021
			SDG Ref	210115-27	210115-27	210115-27	210115-27	210115-27	210115-27
			Lab Sample No.(s)	23548065	23548075	23548044	23548052	23547887	23547896
			AGS Reference						
Dibromofluoromethane**	%	TM116		105	102	99.8	103	88.7	96.2
Toluene-d8**	%	TM116		95.4	96.1	96.4	96.9	90.4	96.5
4-Bromofluorobenzene**	%	TM116		89.9	96.8	85.3	96.7	74.3	84
Methyl Tertiary Butyl Ether	<10 µg/kg	TM116		<200 M	<200 M	<200 M	<200 M	<200 M	<200 M
Benzene	<9 µg/kg	TM116		<180 M	<180 M	<180 M	<180 M	<180 M	<180 M
Toluene	<7 µg/kg	TM116		<140 M	<140 M	<140 M	<140 M	<140 M	<140 M
Ethylbenzene	<4 µg/kg	TM116		<80 M	<80 M	<80 M	<80 M	<80 M	<80 M
p/m-Xylene	<10 µg/kg	TM116		<200 #	<200 #	<200 #	<200 #	<200 #	<200 #
o-Xylene	<10 µg/kg	TM116		<200 M	<200 M	<200 M	<200 M	<200 M	<200 M
Naphthalene	<13 µg/kg	TM116		1410 M	<260 M	1710 M	<260 M	1680 M	819 M
Sum of Detected Xylenes	<0.02 mg/kg	TM116		<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Sum of BTEX	<40 µg/kg	TM116		<800	<800	<800	<800	<800	<800

CERTIFICATE OF ANALYSIS

SDG:	210115-27	**Client Reference:**	P18-669	**Report Number:**	584712
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	584671

VOC MS (S)

Results Legend	
#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
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*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	W168-3	W168-4	W168-5	W168-6	W168-7	W168-8
			Depth (m)	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	14/01/2021	14/01/2021	14/01/2021	14/01/2021	14/01/2021	14/01/2021
			Sample Time	.	.	.	.	.	.
			Date Received	15/01/2021	15/01/2021	15/01/2021	15/01/2021	15/01/2021	15/01/2021
			SDG Ref	210115-27	210115-27	210115-27	210115-27	210115-27	210115-27
			Lab Sample No.(s)	23547907	23547927	23547935	23547942	23547958	23547970
			AGS Reference						
Dibromofluoromethane**	%	TM116		96.9	97.9	92.6	94.8	89.2	103
Toluene-d8**	%	TM116		96.9	95.1	93.2	95	95.2	96.2
4-Bromofluorobenzene**	%	TM116		82.9	82.6	78.8	82.9	80.1	89.5
Methyl Tertiary Butyl Ether	<10 µg/kg	TM116		<200 M	<200 M	<200 M	<200 M	<200 M	<200 M
Benzene	<9 µg/kg	TM116		<180 M	<180 M	<180 M	<180 M	<180 M	<180 M
Toluene	<7 µg/kg	TM116		<140 M	<140 M	<140 M	<140 M	<140 M	<140 M
Ethylbenzene	<4 µg/kg	TM116		<80 M	<80 M	<80 M	<80 M	<80 M	<80 M
p/m-Xylene	<10 µg/kg	TM116		<200 #	<200 #	<200 #	<200 #	<200 #	<200 #
o-Xylene	<10 µg/kg	TM116		<200 M	<200 M	<200 M	<200 M	<200 M	<200 M
Naphthalene	<13 µg/kg	TM116		948 M	651 M	1270 M	806 M	1310 M	368 M
Sum of Detected Xylenes	<0.02 mg/kg	TM116		<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Sum of BTEX	<40 µg/kg	TM116		<800	<800	<800	<800	<800	<800

CERTIFICATE OF ANALYSIS

SDG:	210115-27	**Client Reference:**	P18-669	**Report Number:**	584712
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	584671

VOC MS (S)

Results Legend	
#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	W168-9	W168-10	W168-11			
			Depth (m)	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20			
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)			
			Date Sampled	14/01/2021	14/01/2021	14/01/2021			
			Sample Time	.	.	.			
			Date Received	15/01/2021	15/01/2021	15/01/2021			
			SDG Ref	210115-27	210115-27	210115-27			
			Lab Sample No.(s)	23547983	23548001	23548010			
			AGS Reference						
Dibromofluoromethane**	%	TM116		101	94.8	97			
Toluene-d8**	%	TM116		97.2	94	95			
4-Bromofluorobenzene**	%	TM116		89.3	81.4	80.4			
Methyl Tertiary Butyl Ether	<10 µg/kg	TM116		<200 M	<200 M	<200 M			
Benzene	<9 µg/kg	TM116		<180 M	<180 M	<180 M			
Toluene	<7 µg/kg	TM116		<140 M	<140 M	<140 M			
Ethylbenzene	<4 µg/kg	TM116		<80 M	<80 M	<80 M			
p/m-Xylene	<10 µg/kg	TM116		<200 #	<200 #	<200 #			
o-Xylene	<10 µg/kg	TM116		<200 M	<200 M	<200 M			
Naphthalene	<13 µg/kg	TM116		491 M	839 M	1240 M			
Sum of Detected Xylenes	<0.02 mg/kg	TM116		<0.4	<0.4	<0.4			
Sum of BTEX	<40 µg/kg	TM116		<800	<800	<800			

CERTIFICATE OF ANALYSIS

SDG:	210115-27	**Client Reference:**	P18-669	**Report Number:**	584712
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	584671

Asbestos Identification - Solid Samples

Results Legend

#	ISO17025 accredited.
M	*m*CERTS accredited.
*	Subcontracted test.
(F)	Trigger breach confirmed
1-5&+$@	Sample deviation (see appendix)

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthophyllite	Fibrous Tremolite	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	AL24-1 0.70 - 0.70 SOLID 13/01/2021 00:00:00 15/01/2021 05:00:00 210115-27 23547855 TM048	22/01/21	Andrzej Ferfecki	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	AM33-1 0.30 - 0.30 SOLID 13/01/2021 00:00:00 15/01/2021 05:00:00 210115-27 23547873 TM048	22/01/21	Andrzej Ferfecki	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	AN23-1 0.20 - 0.20 SOLID 13/01/2021 00:00:00 15/01/2021 05:00:00 210115-27 23547829 TM048	21/01/21	Andrzej Ferfecki	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	AO27-1 0.60 - 0.60 SOLID 13/01/2021 00:00:00 15/01/2021 05:00:00 210115-27 23548024 TM048	21/01/21	Andrzej Ferfecki	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	AO29-1 0.50 - 0.50 SOLID 13/01/2021 00:00:00 15/01/2021 05:00:00 210115-27 23547788 TM048	22/01/21	Andrzej Ferfecki	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	AQ24-1 0.20 - 0.20 SOLID 13/01/2021 00:00:00 15/01/2021 05:00:00 210115-27 23548085 TM048	21/01/21	Andrzej Ferfecki	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	AQ25-1 0.20 - 0.20 SOLID 13/01/2021 00:00:00 15/01/2021 05:00:00 210115-27 23548065 TM048	22/01/21	Andrzej Ferfecki	loose fibres in soil	Trace (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	AQ26-1 0.20 - 0.20 SOLID 13/01/2021 00:00:00 15/01/2021 05:00:00 210115-27 23548044 TM048	21/01/2021	Agnieszka Chelmowska	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected

Validated

CERTIFICATE OF ANALYSIS

SDG:	210115-27	**Client Reference:**	P18-669	**Report Number:**	584712
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	584671

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthophyllite	Fibrous Tremolite	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	W168-1 0.20 - 0.20 SOLID 14/01/2021 00:00:00 15/01/2021 05:00:00 210115-27 23547887 TM048	22/01/21	Andrzej Ferfecki	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	W168-3 0.20 - 0.20 SOLID 14/01/2021 00:00:00 15/01/2021 05:00:00 210115-27 23547907 TM048	22/01/21	Andrzej Ferfecki	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	W168-5 0.20 - 0.20 SOLID 14/01/2021 00:00:00 15/01/2021 05:00:00 210115-27 23547935 TM048	21/01/2021	James Richards	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	W168-7 0.20 - 0.20 SOLID 14/01/2021 00:00:00 15/01/2021 05:00:00 210115-27 23547958 TM048	21/01/21	Andrzej Ferfecki	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	W168-9 0.20 - 0.20 SOLID 14/01/2021 00:00:00 15/01/2021 05:00:00 210115-27 23547983 TM048	21/01/21	Andrzej Ferfecki	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	W168-11 0.20 - 0.20 SOLID 14/01/2021 00:00:00 15/01/2021 05:00:00 210115-27 23548010 TM048	21/01/21	Andrzej Ferfecki	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected

CERTIFICATE OF ANALYSIS

SDG:	210115-27	**Client Reference:**	P18-669	**Report Number:**	584712
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	584671

Asbestos Quantification - Full

Results Legend

#	ISO17025 accredited.
M	*m*CERTS accredited.
*	Subcontracted test.
(F)	Trigger breach confirmed
1-5&+$@	Sample deviation (see appendix)

		Additional Asbestos Components	Analysts Comments	Asbestos Quantification - Gravimetric - %	Asbestos Quantification - PCOM	Asbestos Quantification - Total - %
Cust. Sample Ref.	AQ25-1	Chrysotile detected. (#)	Fibre bundles in soil.	0.0083 (#)	<0.001 (#)	0.0083 (#)
Depth (m)	0.20 - 0.20					
Sample Type	SOLID					
Date Sampled	13/01/2021 00:00:00					
Date Received	15/01/2021 05:00:00					
SDG	210115-27					
Original Sample	23548065					
Method Number	TM304					

Table of Results - Appendix

Method No	Reference	Description
PM024	Modified BS 1377	Soil preparation including homogenisation, moisture screens of soils for Asbestos Containing Material
TM024	Method 4500A & B, AWWA/APHA, 20th Ed., 1999	Determination of Exchangeable Ammonium and Ammoniacal Nitrogen as N by titration on solids
TM048	HSG 248, Asbestos: The analysts' guide for sampling, analysis and clearance procedures	Identification of Asbestos in Bulk Material
TM062 (S)	National Grid Property Holdings Methods for the Collection & Analysis of Samples from National Grid Sites version 1 Sec 3.9	Determination of Phenols in Soils by HPLC
TM089	Modified: US EPA Methods 8020 & 602	Determination of Gasoline Range Hydrocarbons (GRO) by Headspace GC-FID (C4-C12)
TM116	Modified: US EPA Method 8260, 8120, 8020, 624, 610 & 602	Determination of Volatile Organic Compounds by Headspace / GC-MS
TM132	In - house Method	ELTRA CS800 Operators Guide
TM133	BS 1377: Part 3 1990;BS 6068-2.5	Determination of pH in Soil and Water using the GLpH pH Meter
TM153	Method 4500A,B,C, I, M AWWA/APHA, 20th Ed., 1999	Determination of Total Cyanide, Free (Easily Liberatable) Cyanide and Thiocyanate using the Skalar SANS+ System Segmented Flow Analyser
TM181	US EPA Method 6010B	Determination of Routine Metals in Soil by iCap 6500 Duo ICP-OES
TM218	Shaker extraction - EPA method 3546.	The determination of PAH in soil samples by GC-MS
TM304	HSE Contract research Report no 83/1996	Asbestos Quantification in Soil: Fibres identified by morphology only
TM414	Analysis of Petroleum Hydrocarbons in Environmental Media – Total Petroleum Hydrocarbon Criteria	Determination of Speciated Extractable Petroleum Hydrocarbons in Soils by GCxGC-FID

NA = not applicable.

Chemical testing (unless subcontracted) performed at ALS Life Sciences Ltd Hawarden (Method codes TM) or ALS Life Sciences Ltd Aberdeen (Method codes S).

CERTIFICATE OF ANALYSIS

SDG:	210115-27	**Client Reference:**	P18-669	**Report Number:**	584712
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	584671

Test Completion Dates

Lab Sample No(s)	23547855	23547865	23547873	23547879	23547829	23547841	23548024	23548034	23547788	23547917
Customer Sample Ref.	AL24-1	AL24-2	AM33-1	AM33-2	AN23-1	AN23-2	AO27-1	AO27-2	AO29-1	AO29-2
AGS Ref.										
Depth	0.70 - 0.70	1.30 - 1.30	0.30 - 0.30	1.30 - 1.30	0.20 - 0.20	1.50 - 1.50	0.60 - 0.60	1.20 - 1.20	0.50 - 0.50	1.50 - 1.50
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
Ammonium Soil by Titration	22-Jan-2021	22-Jan-2021	22-Jan-2021	22-Jan-2021	22-Jan-2021	22-Jan-2021	22-Jan-2021	22-Jan-2021	22-Jan-2021	22-Jan-2021
Asbestos ID in Solid Samples	22-Jan-2021		22-Jan-2021		21-Jan-2021		21-Jan-2021		22-Jan-2021	
Cyanide Comp/Free/Total/Thiocyanate	21-Jan-2021	21-Jan-2021	21-Jan-2021	21-Jan-2021	21-Jan-2021	21-Jan-2021	21-Jan-2021	20-Jan-2021	21-Jan-2021	20-Jan-2021
EPH CWG GC (S)	22-Jan-2021	22-Jan-2021	19-Jan-2021	22-Jan-2021	22-Jan-2021	22-Jan-2021	22-Jan-2021	22-Jan-2021	20-Jan-2021	22-Jan-2021
GRO by GC-FID (S)	22-Jan-2021	22-Jan-2021	21-Jan-2021	21-Jan-2021	22-Jan-2021	21-Jan-2021	22-Jan-2021	22-Jan-2021	22-Jan-2021	22-Jan-2021
Metals in solid samples by OES	22-Jan-2021	22-Jan-2021	21-Jan-2021	22-Jan-2021	22-Jan-2021	22-Jan-2021	22-Jan-2021	22-Jan-2021	22-Jan-2021	22-Jan-2021
PAH by GCMS	22-Jan-2021	21-Jan-2021	21-Jan-2021	21-Jan-2021	21-Jan-2021	21-Jan-2021	21-Jan-2021	21-Jan-2021	21-Jan-2021	21-Jan-2021
pH	18-Jan-2021	18-Jan-2021	18-Jan-2021	18-Jan-2021	18-Jan-2021	18-Jan-2021	18-Jan-2021	18-Jan-2021	18-Jan-2021	18-Jan-2021
Phenols by HPLC (S)	21-Jan-2021	22-Jan-2021	21-Jan-2021	22-Jan-2021	22-Jan-2021	22-Jan-2021	28-Jan-2021	25-Jan-2021	22-Jan-2021	22-Jan-2021
Sample description	18-Jan-2021	16-Jan-2021	16-Jan-2021	18-Jan-2021	18-Jan-2021	18-Jan-2021	16-Jan-2021	16-Jan-2021	16-Jan-2021	16-Jan-2021
Total Organic Carbon	22-Jan-2021	22-Jan-2021	22-Jan-2021	22-Jan-2021	22-Jan-2021	22-Jan-2021	22-Jan-2021	22-Jan-2021	22-Jan-2021	21-Jan-2021
TPH CWG GC (S)	22-Jan-2021	22-Jan-2021	21-Jan-2021	22-Jan-2021	22-Jan-2021	22-Jan-2021	22-Jan-2021	22-Jan-2021	22-Jan-2021	22-Jan-2021
VOC MS (S)	21-Jan-2021	21-Jan-2021	21-Jan-2021	21-Jan-2021	21-Jan-2021	21-Jan-2021	21-Jan-2021	21-Jan-2021	21-Jan-2021	21-Jan-2021

Lab Sample No(s)	23548085	23547819	23548065	23548075	23548044	23548052	23547887	23547896	23547907	23547927
Customer Sample Ref.	AQ24-1	AQ24-2	AQ25-1	AQ25-2	AQ26-1	AQ26-2	W168-1	W168-2	W168-3	W168-4
AGS Ref.										
Depth	0.20 - 0.20	1.50 - 1.50	0.20 - 0.20	1.50 - 1.50	0.20 - 0.20	1.50 - 1.50	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
Ammonium Soil by Titration	22-Jan-2021	22-Jan-2021	22-Jan-2021	22-Jan-2021	22-Jan-2021	22-Jan-2021	22-Jan-2021	22-Jan-2021	22-Jan-2021	22-Jan-2021
Asbestos ID in Solid Samples	21-Jan-2021		22-Jan-2021		21-Jan-2021		22-Jan-2021		22-Jan-2021	
Asbestos Quantification - Full			28-Jan-2021							
Cyanide Comp/Free/Total/Thiocyanate	21-Jan-2021	21-Jan-2021	21-Jan-2021	21-Jan-2021	21-Jan-2021	20-Jan-2021	21-Jan-2021	21-Jan-2021	21-Jan-2021	21-Jan-2021
EPH CWG GC (S)	22-Jan-2021	22-Jan-2021	20-Jan-2021	19-Jan-2021	19-Jan-2021	20-Jan-2021	22-Jan-2021	22-Jan-2021	22-Jan-2021	22-Jan-2021
GRO by GC-FID (S)	21-Jan-2021	21-Jan-2021	22-Jan-2021	21-Jan-2021	22-Jan-2021	21-Jan-2021	22-Jan-2021	22-Jan-2021	22-Jan-2021	22-Jan-2021
Metals in solid samples by OES	22-Jan-2021	22-Jan-2021	22-Jan-2021	22-Jan-2021	22-Jan-2021	22-Jan-2021	22-Jan-2021	22-Jan-2021	22-Jan-2021	21-Jan-2021
PAH by GCMS	21-Jan-2021	21-Jan-2021	21-Jan-2021	21-Jan-2021	21-Jan-2021	21-Jan-2021	21-Jan-2021	21-Jan-2021	21-Jan-2021	21-Jan-2021
pH	18-Jan-2021	18-Jan-2021	18-Jan-2021	18-Jan-2021	18-Jan-2021	18-Jan-2021	18-Jan-2021	18-Jan-2021	18-Jan-2021	18-Jan-2021
Phenols by HPLC (S)	22-Jan-2021	22-Jan-2021	22-Jan-2021	22-Jan-2021	25-Jan-2021	25-Jan-2021	22-Jan-2021	22-Jan-2021	22-Jan-2021	25-Jan-2021
Sample description	18-Jan-2021	18-Jan-2021	16-Jan-2021	16-Jan-2021	16-Jan-2021	16-Jan-2021	18-Jan-2021	18-Jan-2021	18-Jan-2021	18-Jan-2021
Total Organic Carbon	22-Jan-2021	22-Jan-2021	22-Jan-2021	21-Jan-2021	22-Jan-2021	22-Jan-2021	22-Jan-2021	22-Jan-2021	22-Jan-2021	22-Jan-2021
TPH CWG GC (S)	22-Jan-2021	22-Jan-2021	22-Jan-2021	21-Jan-2021	22-Jan-2021	21-Jan-2021	22-Jan-2021	22-Jan-2021	22-Jan-2021	22-Jan-2021
VOC MS (S)	21-Jan-2021	21-Jan-2021	21-Jan-2021	21-Jan-2021	21-Jan-2021	21-Jan-2021	21-Jan-2021	21-Jan-2021	21-Jan-2021	21-Jan-2021

Lab Sample No(s)	23547935	23547942	23547958	23547970	23547983	23548001	23548010
Customer Sample Ref.	W168-5	W168-6	W168-7	W168-8	W168-9	W168-10	W168-11
AGS Ref.							
Depth	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
Ammonium Soil by Titration	22-Jan-2021	22-Jan-2021	22-Jan-2021	22-Jan-2021	22-Jan-2021	21-Jan-2021	22-Jan-2021
Asbestos ID in Solid Samples	21-Jan-2021		21-Jan-2021		21-Jan-2021		21-Jan-2021
Cyanide Comp/Free/Total/Thiocyanate	21-Jan-2021	21-Jan-2021	21-Jan-2021	21-Jan-2021	21-Jan-2021	21-Jan-2021	21-Jan-2021
EPH CWG GC (S)	22-Jan-2021	22-Jan-2021	19-Jan-2021	22-Jan-2021	22-Jan-2021	19-Jan-2021	22-Jan-2021
GRO by GC-FID (S)	22-Jan-2021	22-Jan-2021	22-Jan-2021	22-Jan-2021	22-Jan-2021	22-Jan-2021	22-Jan-2021
Metals in solid samples by OES	22-Jan-2021	22-Jan-2021	22-Jan-2021	22-Jan-2021	22-Jan-2021	22-Jan-2021	22-Jan-2021
PAH by GCMS	21-Jan-2021	21-Jan-2021	21-Jan-2021	21-Jan-2021	21-Jan-2021	21-Jan-2021	21-Jan-2021
pH	18-Jan-2021	18-Jan-2021	18-Jan-2021	18-Jan-2021	18-Jan-2021	18-Jan-2021	18-Jan-2021
Phenols by HPLC (S)	25-Jan-2021	22-Jan-2021	22-Jan-2021	22-Jan-2021	22-Jan-2021	25-Jan-2021	22-Jan-2021
Sample description	18-Jan-2021	18-Jan-2021	16-Jan-2021	18-Jan-2021	18-Jan-2021	16-Jan-2021	18-Jan-2021
Total Organic Carbon	22-Jan-2021	22-Jan-2021	22-Jan-2021	21-Jan-2021	22-Jan-2021	21-Jan-2021	21-Jan-2021
TPH CWG GC (S)	22-Jan-2021	22-Jan-2021	22-Jan-2021	22-Jan-2021	22-Jan-2021	22-Jan-2021	22-Jan-2021
VOC MS (S)	21-Jan-2021	21-Jan-2021	21-Jan-2021	21-Jan-2021	21-Jan-2021	21-Jan-2021	21-Jan-2021

Appendix General

1. Results are expressed on a dry weight basis (dried at 35ºC) for all soil analyses except for the following: NRA and CEN Leach tests, flash point LOI, pH, ammonium as NH4 by the BRE method, VOC TICs and SVOC TICs.

2. If sufficient sample is received a sub sample will be retained free of charge for 30 days after analysis is completed (e-mailed) for all sample types unless the sample is destroyed on testing. The prepared soil sub sample that is analysed for asbestos will be retained for a period of 6 months after the analysis date. All bulk samples will be retained for a period of 6 months after the analysis date. All samples received and not scheduled will be disposed of one month after the date of receipt unless we are instructed to the contrary. Once the initial period has expired, a storage charge will be applied for each month or part thereof until the client cancels the request for sample storage. ALS reserve the right to charge for samples received and stored but not analysed.

3. With respect to turnaround, we will always endeavour to meet client requirements wherever possible, but turnaround times cannot be absolutely guaranteed due to so many variables beyond our control.

4. We take responsibility for any test performed by sub-contractors (marked with an asterisk). We endeavour to use UKAS/MCERTS Accredited Laboratories, who either complete a quality questionnaire or are audited by ourselves. For some determinands there are no UKAS/MCERTS Accredited Laboratories, in this instance a laboratory with a known track record will be utilised.

5. If no separate volatile sample is supplied by the client, or if a headspace or sediment is present in the volatile sample, the integrity of the data may be compromised. This will be flagged up as an invalid VOC on the test schedule and the result marked as deviating on the test certificate.

6. NDP - No determination possible due to insufficient/unsuitable sample.

7. Results relate only to the items tested.

8. LoDs (Limit of Detection) for wet tests reported on a dry weight basis are not corrected for moisture content.

9. **Surrogate recoveries** - Surrogates are added to your sample to monitor recovery of the test requested. A % recovery is reported, results are not corrected for the recovery measured. Typical recoveries for organics tests are 70-130%. Recoveries in soils are affected by organic rich or clay rich matrices. Waters can be affected by remediation fluids or high amounts of sediment. Test results are only ever reported if all of the associated quality checks pass; it is assumed that all recoveries outside of the values above are due to matrix affect.

10. Stones/debris are not routinely removed. We always endeavour to take a representative sub sample from the received sample.

11. In certain circumstances the method detection limit may be elevated due to the sample being outside the calibration range. Other factors that may contribute to this include possible interferences. In both cases the sample would be diluted which would cause the method detection limit to be raised.

12. Mercury results quoted on soils will not include volatile mercury as the analysis is performed on a dried and crushed sample.

13. For leachate preparations other than Zero Headspace Extraction (ZHE) volatile loss may occur.

14. For the BSEN 12457-3 two batch process to allow the cumulative release to be calculated, the volume of the leachate produced is measured and filtered for all tests. We therefore cannot carry out any unfiltered analysis. The tests affected include volatiles GCFID/GCMS and all subcontracted analysis.

15. Analysis and identification of specific compounds using GCFID is by retention time only, and we routinely calibrate and quantify for benzene, toluene, ethylbenzenes and xylenes (BTEX). For total volatiles in the C5-C12 range, the total area of the chromatogram is integrated and expressed as ug/kg or ug/l. Although this analysis is commonly used for the quantification of gasoline range organics (GRO), the system will also detect other compounds such as chlorinated solvents, and this may lead to a falsely high result with respect to hydrocarbons only. It is not possible to specifically identify these non-hydrocarbons, as standards are not routinely run for any other compounds, and for more definitive identification, volatiles by GCMS should be utilised.

16. We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample. Other coarse granular material such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

17. **Tentatively Identified Compounds (TICs)** are non-target peaks in VOC and SVOC analysis. All non-target peaks detected with a concentration above the LoD are subjected to a mass spectral library search. Non-target peaks with a library search confidence of >75% are reported based on the best mass spectral library match. When a non-target peak with a library search confidence of <75% is detected it is reported as "mixed hydrocarbons". Non-target compounds identified from the scan data are semi-quantified relative to one of the deuterated internal standards, under the same chromatographic conditions as the target compounds. This result is reported as a semi-quantitative value and reported as Tentatively Identified Compounds (TICs). TICs are outside the scope of UKAS accreditation and are not moisture corrected.

18. **Sample Deviations**

If a sample is classed as deviated then the associated results may be compromised.

1	**Container with Headspace provided for volatiles analysis**
2	**Incorrect container received**
3	**Deviation from method**
4	**Matrix interference**
♦	**Sample holding time exceeded in laboratory**
@	**Sample holding time exceeded due to late arrival of instructions or samples**
§	**Sampled on date not provided**

19. **Asbestos**

When requested, the individual sub sample scheduled will be analysed in house for the presence of asbestos fibres and asbestos containing material by our documented in house method TM048 based on HSG 248 (2005), which is accredited to ISO17025. If a specific asbestos fibre type is not found this will be reported as "Not detected". If no asbestos fibre types are found all will be reported as "Not detected" and the sub sample analysed deemed to be clear of asbestos. If an asbestos fibre type is found it will be reported as detected (for each fibre type found). Testing can be carried out on asbestos positive samples, but, due to Health and Safety considerations, may be replaced by alternative tests or reported as No Determination Possible (NDP). The quantity of asbestos present is not determined unless specifically requested.

Identification of Asbestos in Bulk Materials & Soils

The results for identification of asbestos in bulk materials are obtained from supplied bulk materials which have been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

The results for identification of asbestos in soils are obtained from a homogenised sub sample which has been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

Asbestos Type	Common Name
Chrysotile	White Asbestos
Amosite	Brown Asbestos
Crocidolite	Blue Asbestos
Fibrous Actinolite	-
Fibrous Anthophyllite	-
Fibrous Tremolite	-

Visual Estimation Of Fibre Content

Estimation of fibre content is not permitted as part of our UKAS accredited test other than: - Trace - Where only one or two asbestos fibres were identified.

Respirable Fibres

Respirable fibres are defined as fibres of <3 µm diameter, longer than 5 µm and with aspect ratios of at least 3:1 that can be inhaled into the lower regions of the lung and are generally acknowledged to be most important predictor of hazard and risk for cancers of the lung.
Standing Committee of Analysts, *The Quantification of Asbestos in Soil (2017).*

Further guidance on typical asbestos fibre content of manufactured products can be found in HSG 264.

The identification of asbestos containing materials and soils falls within our schedule of tests for which we hold UKAS accreditation, however opinions, interpretations and all other information contained in the report are outside the scope of UKAS accreditation.

Unit 7-8 Hawarden Business Park
Manor Road (off Manor Lane)
Hawarden
Deeside
CH5 3US
Tel: (01244) 528700
Fax: (01244) 528701
email: hawardencustomerservices@alsglobal.com
Website: www.alsenvironmental.co.uk

Rodgers Leask
Office 225
2430/2440
Aztec West
Almondsbury
Bristol
BS32 4QA

Attention: Elliot Thomas

CERTIFICATE OF ANALYSIS

Date of report Generation:	12 March 2021
Customer:	Rodgers Leask
Sample Delivery Group (SDG):	210202-91
Your Reference:	P18-669
Location:	Llanwern
Report No:	590436

This report has been revised and directly supersedes 590434 in its entirety.

We received 23 samples on Tuesday February 02, 2021 and 23 of these samples were scheduled for analysis which was completed on Friday March 12, 2021. Accredited laboratory tests are defined within the report, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation.

Should this report require incorporation into client reports, it must be used in its entirety and not simply with the data sections alone.

Chemical testing (unless subcontracted) performed at ALS Life Sciences Ltd Hawarden (Method codes TM) or ALS Life Sciences Ltd Aberdeen (Method codes S).

All sample data is provided by the customer. The reported results relate to the sample supplied, and on the basis that this data is correct.
Incorrect sampling dates and/or sample information will affect the validity of results.
The customer is not permitted to reproduce this report except in full without the approval of the laboratory.

Approved By:

Sonia McWhan

Operations Manager

CERTIFICATE OF ANALYSIS

SDG:	210202-91	**Client Reference:**	P18-669	**Report Number:**	590436
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	590434

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
23652632	AJ21-1		0.30 - 0.30	29/01/2021
23652638	AJ21-2		1.30 - 1.30	29/01/2021
23652642	AK21-1		0.50 - 0.50	29/01/2021
23652650	AK21-2		1.20 - 1.20	29/01/2021
23652548	AK22-1		0.50 - 0.50	29/01/2021
23652599	AK22-2		1.60 - 1.60	29/01/2021
23652657	AL21-1		0.50 - 0.50	29/01/2021
23652664	AL21-2		1.40 - 1.40	29/01/2021
23652671	P20-1		0.50 - 0.50	01/02/2021
23652552	P20-2		1.30 - 1.30	01/02/2021
23652557	P21-1		0.30 - 0.30	01/02/2021
23652561	P21-2		1.50 - 1.50	01/02/2021
23652565	Q20-1		0.60 - 0.60	01/02/2021
23652571	Q20-2		1.80 - 1.80	01/02/2021
23652577	Q21-1		0.30 - 0.30	01/02/2021
23652581	Q21-2		1.90 - 1.90	01/02/2021
23652618	Q22-1		0.30 - 0.30	01/02/2021
23652623	Q22-2		1.70 - 1.70	01/02/2021
23652585	R21-1		0.30 - 0.30	01/02/2021
23652589	R21-2		1.00 - 1.00	01/02/2021
23652594	R21-3		2.20 - 2.20	01/02/2021
23652609	R22-1		0.20 - 0.20	01/02/2021
23652613	R22-2		1.60 - 1.60	01/02/2021

Only received samples which have had analysis scheduled will be shown on the following pages.

Validated

CERTIFICATE OF ANALYSIS

SDG:	210202-91	**Client Reference:**	P18-669	**Report Number:**	590436
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	590434

Results Legend

X Test

N No Determination Possible

Sample Types -

S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

Lab Sample No(s)			23652632		23652638		23652642		23652650		23652548		23652599		23652657		23652664				
Customer Sample Reference			AJ21-1		AJ21-2		AK21-1		AK21-2		AK22-1		AK22-2		AL21-1		AL21-2				
AGS Reference																					
Depth (m)			0.30 - 0.30		1.30 - 1.30		0.50 - 0.50		1.20 - 1.20		0.50 - 0.50		1.60 - 1.60		0.50 - 0.50		1.40 - 1.40				
Container			1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)
Sample Type			S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
Ammonium Soil by Titration	All	NDPs: 0 Tests: 23		X		X			X		X			X		X			X		X
Asbestos ID in Solid Samples	All	NDPs: 0 Tests: 12	X					X					X					X			
Asbestos Quantification - Full	All	NDPs: 0 Tests: 1																X			
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 23		X		X			X		X			X		X			X		X
EPH CWG GC (S)	All	NDPs: 0 Tests: 23		X		X			X		X			X		X			X		X
GRO by GC-FID (S)	All	NDPs: 0 Tests: 23			X		X			X		X			X		X			X	
Metals in solid samples by OES	All	NDPs: 0 Tests: 23		X		X			X		X			X		X			X		X
PAH by GCMS	All	NDPs: 0 Tests: 23		X		X			X		X			X		X			X		X
pH	All	NDPs: 0 Tests: 23		X		X			X		X			X		X			X		X
Phenols by HPLC (S)	All	NDPs: 0 Tests: 23		X		X			X		X			X		X			X		X
Sample description	All	NDPs: 0 Tests: 23		X		X			X		X			X		X			X		X
Total Organic Carbon	All	NDPs: 0 Tests: 23		X		X			X		X			X		X			X		X
TPH CWG GC (S)	All	NDPs: 0 Tests: 23		X		X			X		X			X		X			X		X
VOC MS (S)	All	NDPs: 0 Tests: 23			X		X			X		X			X		X			X	

23652581	Q21-2		1.90 - 1.90	60g VOC (ALE215)	S							x											x
				250g Amber Jar (ALE210)	S	x				x	x		x	x	x	x	x	x	x	x			
23652577	Q21-1		0.30 - 0.30	60g VOC (ALE215)	S							x											x
				250g Amber Jar (ALE210)	S	x				x	x		x	x	x	x	x	x	x	x			
				1kg TUB with Handle (ALE260)	S		x																
23652571	Q20-2		1.80 - 1.80	60g VOC (ALE215)	S							x											x
				250g Amber Jar (ALE210)	S	x				x	x		x	x	x	x	x	x	x	x			
23652565	Q20-1		0.60 - 0.60	60g VOC (ALE215)	S							x											x
				250g Amber Jar (ALE210)	S	x				x	x		x	x	x	x	x	x	x	x			
				1kg TUB with Handle (ALE260)	S		x																
23652561	P21-2		1.50 - 1.50	60g VOC (ALE215)	S							x											x
				250g Amber Jar (ALE210)	S	x				x	x		x	x	x	x	x	x	x	x			
23652557	P21-1		0.30 - 0.30	60g VOC (ALE215)	S							x											x
				250g Amber Jar (ALE210)	S	x				x	x		x	x	x	x	x	x	x	x			
				1kg TUB with Handle (ALE260)	S		x																
23652552	P20-2		1.30 - 1.30	60g VOC (ALE215)	S							x											x
				250g Amber Jar (ALE210)	S	x				x	x		x	x	x	x	x	x	x	x			
23652671	P20-1		0.50 - 0.50	60g VOC (ALE215)	S							x											x
				250g Amber Jar (ALE210)	S	x				x	x		x	x	x	x	x	x	x	x			
				1kg TUB with Handle (ALE260)	S		x																
23652664	AL21-2		1.40 - 1.40	60g VOC (ALE215)	S							x											x

Validated

CERTIFICATE OF ANALYSIS

SDG:	210202-91	**Client Reference:**	P18-669	**Report Number:**	590436
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	590434

Results Legend

X Test

N No Determination Possible

Sample Types -

S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

Lab Sample No(s)			23652618		23652623			23652585			23652589		23652594			23652609			23652613	
Customer Sample Reference			Q22-1		Q22-2			R21-1			R21-2		R21-3			R22-1			R22-2	
AGS Reference																				
Depth (m)			0.30 - 0.30		1.70 - 1.70			0.30 - 0.30			1.00 - 1.00		2.20 - 2.20			0.20 - 0.20			1.60 - 1.60	
Container			250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)	60g VOC (ALE215)
Sample Type			S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
Ammonium Soil by Titration	All	NDPs: 0 Tests: 23	X			X			X		X			X		X			X	
Asbestos ID in Solid Samples	All	NDPs: 0 Tests: 12			X			X					X					X		
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 23	X			X			X		X			X		X			X	
EPH CWG GC (S)	All	NDPs: 0 Tests: 23	X			X			X		X			X		X			X	
GRO by GC-FID (S)	All	NDPs: 0 Tests: 23		X			X			X		X			X		X			X
Metals in solid samples by OES	All	NDPs: 0 Tests: 23	X			X			X		X			X		X			X	
PAH by GCMS	All	NDPs: 0 Tests: 23	X			X			X		X			X		X			X	
pH	All	NDPs: 0 Tests: 23	X			X			X		X			X		X			X	
Phenols by HPLC (S)	All	NDPs: 0 Tests: 23	X			X			X		X			X		X			X	
Sample description	All	NDPs: 0 Tests: 23	X			X			X		X			X		X			X	
Total Organic Carbon	All	NDPs: 0 Tests: 23	X			X			X		X			X		X			X	
TPH CWG GC (S)	All	NDPs: 0 Tests: 23	X			X			X		X			X		X			X	
VOC MS (S)	All	NDPs: 0 Tests: 23		X			X			X		X			X		X			X

CERTIFICATE OF ANALYSIS

SDG:	210202-91	**Client Reference:**	P18-669	**Report Number:**	590436
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	590434

Sample Descriptions

Grain Sizes

very fine	<0.063mm	fine	0.063mm - 0.1mm	medium	0.1mm - 2mm	coarse	2mm - 10mm	very coarse	>10mm

Lab Sample No(s)	Customer Sample Ref.	Depth (m)	Colour	Description	Inclusions	Inclusions 2
23652632	AJ21-1	0.30 - 0.30	Dark Brown	Loamy Sand	Stones	None
23652638	AJ21-2	1.30 - 1.30	Light Brown	Sand	Stones	None
23652642	AK21-1	0.50 - 0.50	Dark Brown	Sandy Clay	Stones	None
23652650	AK21-2	1.20 - 1.20	Dark Brown	Loamy Sand	Stones	None
23652548	AK22-1	0.50 - 0.50	Dark Brown	Loamy Sand	Stones	None
23652599	AK22-2	1.60 - 1.60	Dark Brown	Silty Sand	Stones	None
23652657	AL21-1	0.50 - 0.50	Dark Brown	Loamy Sand	Stones	None
23652664	AL21-2	1.40 - 1.40	Dark Brown	Sand	Stones	None
23652671	P20-1	0.50 - 0.50	Dark Brown	Sandy Silt Loam	Stones	None
23652552	P20-2	1.30 - 1.30	Dark Brown	Sandy Clay Loam	Stones	None
23652557	P21-1	0.30 - 0.30	Dark Brown	Sandy Loam	Stones	None
23652561	P21-2	1.50 - 1.50	Dark Brown	Loamy Sand	Stones	None
23652565	Q20-1	0.60 - 0.60	Dark Brown	Sandy Silt Loam	Stones	None
23652571	Q20-2	1.80 - 1.80	Dark Brown	Stone/Soil	Stones	None
23652577	Q21-1	0.30 - 0.30	Dark Brown	Sandy Silt Loam	Stones	None
23652581	Q21-2	1.90 - 1.90	Light Brown	Silty Sand	Stones	Vegetation
23652618	Q22-1	0.30 - 0.30	Dark Brown	Loamy Sand	Stones	None
23652623	Q22-2	1.70 - 1.70	Dark Brown	Loamy Sand	Stones	None
23652585	R21-1	0.30 - 0.30	Dark Brown	Sandy Loam	Stones	None
23652589	R21-2	1.00 - 1.00	Dark Brown	Sandy Loam	Stones	None
23652594	R21-3	2.20 - 2.20	Dark Brown	Silty Sand	Stones	None
23652609	R22-1	0.20 - 0.20	Dark Brown	Sandy Silt Loam	Stones	None
23652613	R22-2	1.60 - 1.60	Dark Brown	Sandy Loam	Stones	None

These descriptions are only intended to act as a cross check if sample identities are questioned, and to provide a log of sample matrices with respect to MCERTS validation. They are not intended as full geological descriptions.

We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally ocurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample.

Other coarse granular materials such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

Validated

CERTIFICATE OF ANALYSIS

SDG:	210202-91	**Client Reference:**	P18-669	**Report Number:**	590436
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	590434

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	AJ21-1	AJ21-2	AK21-1	AK21-2	AK22-1	AK22-2
			Depth (m)	0.30 - 0.30	1.30 - 1.30	0.50 - 0.50	1.20 - 1.20	0.50 - 0.50	1.60 - 1.60
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	29/01/2021	29/01/2021	29/01/2021	29/01/2021	29/01/2021	29/01/2021
			Sample Time	.	.	.	.	.	.
			Date Received	02/02/2021	02/02/2021	02/02/2021	02/02/2021	02/02/2021	02/02/2021
			SDG Ref	210202-91	210202-91	210202-91	210202-91	210202-91	210202-91
			Lab Sample No.(s)	23652632	23652638	23652642	23652650	23652548	23652599
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		6.7	9.4	14	13	12	15
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	<12 M	<12 M	<12 M	<12 M	<12 M
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M
Soil Organic Matter (SOM)	<0.35 %	TM132		5.07 #	2.09 #	2.09 #	11.1 #	37.4 #	11.3 #
pH	1 pH Units	TM133		10.2 M	9.22 M	8.84 M	10.3 M	11.3 M	11.6 M
Cyanide, Total	<1 mg/kg	TM153		<1 M	<1 M	<1 M	4.21 M	5.06 M	1.73 M
Arsenic	<0.6 mg/kg	TM181		<6 M	61.5 M	11.8 M	<6 M	12.2 M	7.92 M
Cadmium	<0.02 mg/kg	TM181		0.394 M	1.72 M	0.353 M	0.439 M	1.04 M	0.52 M
Chromium	<0.9 mg/kg	TM181		132 M	11.6 M	14.4 M	31 M	<9 M	37.2 M
Copper	<1.4 mg/kg	TM181		15.9 M	11 M	16.7 M	<14 M	20.7 M	19.6 M
Iron	<1000 mg/kg	TM181		98000 #	15600 #	30300 #	43300 #	220000 #	76400 #
Lead	<0.7 mg/kg	TM181		43.1 M	80.1 M	32.4 M	76.3 M	382 M	127 M
Manganese	<0.13 mg/kg	TM181		8510 M	2030 M	1050 M	5120 M	4060 M	2940 M
Mercury	<0.1 mg/kg	TM181		<1 M	<0.1 M	<0.1 M	<1 M	5.69 M	<1 M
Nickel	<0.2 mg/kg	TM181		23 M	8.83 M	24.3 M	10.8 M	36.9 M	24.8 M
Selenium	<1 mg/kg	TM181		<10 #	1.71 #	<1 #	<10 #	<10 #	<10 #
Vanadium	<0.2 mg/kg	TM181		70.4 #	34 #	26.4 #	38.5 #	280 #	62.9 #
Zinc	<1.9 mg/kg	TM181		131 M	573 M	117 M	237 M	641 M	236 M

Validated

CERTIFICATE OF ANALYSIS

SDG:	210202-91	**Client Reference:**	P18-669	**Report Number:**	590436
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	590434

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	AL21-1	AL21-2	P20-1	P20-2	P21-1	P21-2
			Depth (m)	0.50 - 0.50	1.40 - 1.40	0.50 - 0.50	1.30 - 1.30	0.30 - 0.30	1.50 - 1.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	29/01/2021	29/01/2021	01/02/2021	01/02/2021	01/02/2021	01/02/2021
			Sample Time	.	.	.	.	.	.
			Date Received	02/02/2021	02/02/2021	02/02/2021	02/02/2021	02/02/2021	02/02/2021
			SDG Ref	210202-91	210202-91	210202-91	210202-91	210202-91	210202-91
			Lab Sample No.(s)	23652657	23652664	23652671	23652552	23652557	23652561
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		20	11	9.8	23	13	9.8
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	<12 M	<12 M	51.8 M	<12 M	<12 M
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	0.0111 M	0.0258 M	<0.01 M	<0.01 M
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	0.0111 M	0.0129 M	0.0114 M	<0.01 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M
Soil Organic Matter (SOM)	<0.35 %	TM132		12 #	5.26 #	10.9 #	8.46 #	13.8 #	2.1 #
pH	1 pH Units	TM133		8.81 M	9.39 M	11.8 M	11.3 M	11.3 M	11.2 M
Cyanide, Total	<1 mg/kg	TM153		3.41 M	2.09 M	<1 M	<1 M	<1 M	<1 M
Arsenic	<0.6 mg/kg	TM181		10.2 M	<6 M	6.61 M	16 M	9.58 M	7.79 M
Cadmium	<0.02 mg/kg	TM181		1.89 M	<0.2 M	0.716 M	0.537 M	0.864 M	0.356 M
Chromium	<0.9 mg/kg	TM181		238 M	12 M	131 M	56.8 M	67.7 M	456 M
Copper	<1.4 mg/kg	TM181		26.3 M	17.8 M	<14 M	21.9 M	17 M	27.5 M
Iron	<1000 mg/kg	TM181		109000 #	18500 #	194000 #	116000 #	176000 #	176000 #
Lead	<0.7 mg/kg	TM181		167 M	27 M	47.9 M	44.2 M	63.2 M	34.9 M
Manganese	<0.13 mg/kg	TM181		16900 M	1060 M	7940 M	4390 M	6860 M	19500 M
Mercury	<0.1 mg/kg	TM181		<1 M	<1 M	<1 M	<1 M	<1 M	<1 M
Nickel	<0.2 mg/kg	TM181		18.7 M	19.6 M	22.4 M	34.2 M	27.8 M	15.1 M
Selenium	<1 mg/kg	TM181		<10 #	<10 #	<10 #	<10 #	<10 #	<10 #
Vanadium	<0.2 mg/kg	TM181		208 #	25.6 #	154 #	106 #	121 #	408 #
Zinc	<1.9 mg/kg	TM181		546 M	75.6 M	168 M	131 M	191 M	107 M
Asbestos Quantification - Gravimetric - %	<0.001 %	TM304		0.0203 #					
Asbestos Quantification - PCOM Evaluation - %	<0.001 %	TM304		<0.001 #					
Additional Asbestos Components (Using TM048)		TM304		None #					
Analysts Comments		TM304		ACM debris in soil					
Asbestos Quantification - Total - %	<0.001 %	TM304		0.0203 #					

Validated

CERTIFICATE OF ANALYSIS

SDG:	210202-91	**Client Reference:**	P18-669	**Report Number:**	590436
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	590434

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	Q20-1	Q20-2	Q21-1	Q21-2	Q22-1	Q22-2
			Depth (m)	0.60 - 0.60	1.80 - 1.80	0.30 - 0.30	1.90 - 1.90	0.30 - 0.30	1.70 - 1.70
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	01/02/2021	01/02/2021	01/02/2021	01/02/2021	01/02/2021	01/02/2021
			Sample Time	.	.	.	.	.	.
			Date Received	02/02/2021	02/02/2021	02/02/2021	02/02/2021	02/02/2021	02/02/2021
			SDG Ref	210202-91	210202-91	210202-91	210202-91	210202-91	210202-91
			Lab Sample No.(s)	23652565	23652571	23652577	23652581	23652618	23652623
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		8.9	17	9.1	15	13	11
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	43.9 #	<12 M	27.8 M	<12 M	<12 M
Phenol	<0.01 mg/kg	TM062 (S)		0.0549 M	<0.01 #	0.011 M	<0.01 M	0.023 M	<0.01 M
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 #	<0.01 M	<0.01 M	0.023 M	<0.01 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 #	<0.015 M	<0.015 M	<0.015 M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		0.0549 M	<0.035 #	<0.035 M	<0.035 M	0.046 M	<0.035 M
Soil Organic Matter (SOM)	<0.35 %	TM132		4.1 #	12.2 #	19.7 #	3.05 #	4.69 #	1.07 #
pH	1 pH Units	TM133		11.2 M	9.61 #	10.3 M	8.62 M	12.1 M	10.9 M
Cyanide, Total	<1 mg/kg	TM153		<1 M	<1 #	<1 M	<1 M	1.96 M	<1 M
Arsenic	<0.6 mg/kg	TM181		8.13 M	9.02 #	7.96 M	6.39 M	18.6 M	<6 M
Cadmium	<0.02 mg/kg	TM181		2.03 M	0.139 #	0.882 M	0.306 M	2.86 M	0.427 M
Chromium	<0.9 mg/kg	TM181		81.9 M	5.19 #	62 M	20.1 M	411 M	125 M
Copper	<1.4 mg/kg	TM181		21.3 M	23 #	19.4 M	<14 M	41.7 M	<14 M
Iron	<1000 mg/kg	TM181		75700 #	20500 #	148000 #	37600 #	190000 #	80400 #
Lead	<0.7 mg/kg	TM181		109 M	20.2 #	80.6 M	22.1 M	369 M	21.4 M
Manganese	<0.13 mg/kg	TM181		7190 M	402 #	7410 M	2970 M	24500 M	8590 M
Mercury	<0.1 mg/kg	TM181		<1 M	<0.1 #	<1 M	<1 M	<1 M	<1 M
Nickel	<0.2 mg/kg	TM181		18.9 M	26.9 #	23.8 M	20.9 M	31.1 M	7.4 M
Selenium	<1 mg/kg	TM181		<10 #	<1 #	<10 #	<10 #	10.5 #	<10 #
Vanadium	<0.2 mg/kg	TM181		98.3 #	18.6 #	125 #	43.6 #	414 #	244 #
Zinc	<1.9 mg/kg	TM181		467 M	50.1 #	222 M	81.3 M	1260 M	59.7 M

Validated

CERTIFICATE OF ANALYSIS

SDG:	210202-91	**Client Reference:**	P18-669	**Report Number:**	590436
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	590434

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	R21-1	R21-2	R21-3	R22-1	R22-2
			Depth (m)	0.30 - 0.30	1.00 - 1.00	2.20 - 2.20	0.20 - 0.20	1.60 - 1.60
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	01/02/2021	01/02/2021	01/02/2021	01/02/2021	01/02/2021
			Sample Time	.	.	.	.	.
			Date Received	02/02/2021	02/02/2021	02/02/2021	02/02/2021	02/02/2021
			SDG Ref	210202-91	210202-91	210202-91	210202-91	210202-91
			Lab Sample No.(s)	23652585	23652589	23652594	23652609	23652613
			AGS Reference					
Moisture Content Ratio (% of as received sample)	%	PM024		8.8	12	11	11	13
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	<12 M	<12 M	<12 M	<12 M
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 M	0.0114 M	<0.01 M	<0.01 M	<0.01 M
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	0.0112 M	0.0112 M	<0.01 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M
Soil Organic Matter (SOM)	<0.35 %	TM132		6.15 #	8.79 #	6.5 #	3.34 #	7.43 #
pH	1 pH Units	TM133		11.7 M	11.4 M	11 M	12.1 M	11.9 M
Cyanide, Total	<1 mg/kg	TM153		<1 M	<1 M	<1 M	<1 M	<1 M
Arsenic	<0.6 mg/kg	TM181		17.8 M	9.45 M	6.58 M	9.05 M	<6 M
Cadmium	<0.02 mg/kg	TM181		2.04 M	0.673 M	2.4 M	0.735 M	1.95 M
Chromium	<0.9 mg/kg	TM181		155 M	115 M	451 M	237 M	184 M
Copper	<1.4 mg/kg	TM181		21.3 M	19.8 M	16.4 M	47.9 M	<14 M
Iron	<1000 mg/kg	TM181		183000 #	101000 #	174000 #	117000 #	160000 #
Lead	<0.7 mg/kg	TM181		35.6 M	68.4 M	57.8 M	102 M	11.1 M
Manganese	<0.13 mg/kg	TM181		13900 M	9310 M	26200 M	12300 M	10000 M
Mercury	<0.1 mg/kg	TM181		<1 M	<1 M	<1 M	<1 M	<1 M
Nickel	<0.2 mg/kg	TM181		20.5 M	21 M	14.7 M	25.3 M	12.8 M
Selenium	<1 mg/kg	TM181		<10 #	<10 #	<10 #	<10 #	<10 #
Vanadium	<0.2 mg/kg	TM181		184 #	162 #	337 #	220 #	209 #
Zinc	<1.9 mg/kg	TM181		153 M	220 M	231 M	373 M	76.4 M

Validated

CERTIFICATE OF ANALYSIS

SDG:	210202-91	**Client Reference:**	P18-669	**Report Number:**	590436
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	590434

PAH by GCMS

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	AJ21-1	AJ21-2	AK21-1	AK21-2	AK22-1	AK22-2
			Depth (m)	0.30 - 0.30	1.30 - 1.30	0.50 - 0.50	1.20 - 1.20	0.50 - 0.50	1.60 - 1.60
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	29/01/2021	29/01/2021	29/01/2021	29/01/2021	29/01/2021	29/01/2021
			Sample Time	.	.	.	.	.	.
			Date Received	02/02/2021	02/02/2021	02/02/2021	02/02/2021	02/02/2021	02/02/2021
			SDG Ref	210202-91	210202-91	210202-91	210202-91	210202-91	210202-91
			Lab Sample No.(s)	23652632	23652638	23652642	23652650	23652548	23652599
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		78.6	78.3	79.7	75	81.1	80.8
Acenaphthene-d10 % recovery**	%	TM218		80.4	81.9	80.5	79	82.9	80.8
Phenanthrene-d10 % recovery**	%	TM218		85	86.4	84.3	77.5	86.2	85.7
Chrysene-d12 % recovery**	%	TM218		86	95.4	91.7	74	85.8	87.7
Perylene-d12 % recovery**	%	TM218		79.2	89.5	90.9	73.5	74.4	79.4
Naphthalene	<9 µg/kg	TM218		217 M	11 M	<9 M	<450 M	232 M	329 M
Acenaphthylene	<12 µg/kg	TM218		<240 M	<12 M	<12 M	<600 M	85 M	75.6 M
Acenaphthene	<8 µg/kg	TM218		<160 M	67.9 M	<8 M	<400 M	22.9 M	17.5 M
Fluorene	<10 µg/kg	TM218		<200 M	82.4 M	<10 M	<500 M	62.2 M	58.8 M
Phenanthrene	<15 µg/kg	TM218		540 M	1450 M	54.5 M	4160 M	557 M	407 M
Anthracene	<16 µg/kg	TM218		<320 M	286 M	19.9 M	<800 M	148 M	112 M
Fluoranthene	<17 µg/kg	TM218		1120 M	1720 M	142 M	4720 M	1200 M	596 M
Pyrene	<15 µg/kg	TM218		864 M	1240 M	119 M	3890 M	969 M	468 M
Benz(a)anthracene	<14 µg/kg	TM218		577 M	601 M	85.4 M	1710 M	669 M	320 M
Chrysene	<10 µg/kg	TM218		456 M	495 M	88 M	2280 M	709 M	359 M
Benzo(b)fluoranthene	<15 µg/kg	TM218		859 M	455 M	110 M	2540 M	977 M	474 M
Benzo(k)fluoranthene	<14 µg/kg	TM218		<280 M	160 M	33.6 M	<700 M	300 M	136 M
Benzo(a)pyrene	<15 µg/kg	TM218		480 M	259 M	67.3 M	1220 M	568 M	282 M
Indeno(1,2,3-cd)pyrene	<18 µg/kg	TM218		407 M	137 M	42.2 M	1310 M	434 M	229 M
Dibenzo(a,h)anthracene	<23 µg/kg	TM218		<460 M	36 M	<23 M	<1150 M	103 M	51.1 M
Benzo(g,h,i)perylene	<24 µg/kg	TM218		<480 M	126 M	40.3 M	<1200 M	399 M	211 M
PAH, Total Detected USEPA 16	<118 µg/kg	TM218		5520	7130	801	21800	7430	4130

Validated

CERTIFICATE OF ANALYSIS

SDG:	210202-91	**Client Reference:**	P18-669	**Report Number:**	590436
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	590434

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	AL21-1	AL21-2	P20-1	P20-2	P21-1	P21-2
			Depth (m)	0.50 - 0.50	1.40 - 1.40	0.50 - 0.50	1.30 - 1.30	0.30 - 0.30	1.50 - 1.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	29/01/2021	29/01/2021	01/02/2021	01/02/2021	01/02/2021	01/02/2021
			Sample Time	.	.	.	.	.	.
			Date Received	02/02/2021	02/02/2021	02/02/2021	02/02/2021	02/02/2021	02/02/2021
			SDG Ref	210202-91	210202-91	210202-91	210202-91	210202-91	210202-91
			Lab Sample No.(s)	23652657	23652664	23652671	23652552	23652557	23652561
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		81.6	79.4	77.7	77.7	72.3	79.5
Acenaphthene-d10 % recovery**	%	TM218		79.4	77.9	81.3	80.5	77.9	81.7
Phenanthrene-d10 % recovery**	%	TM218		80.9	80.1	87.4	81	79.1	82.5
Chrysene-d12 % recovery**	%	TM218		77.2	75.5	92.4	78.8	85.5	85.8
Perylene-d12 % recovery**	%	TM218		74.3	72.6	82.8	70.2	76.4	81.2
Naphthalene	<9 µg/kg	TM218		87.2 M	85.9 M	722 M	249 M	1130 M	69.5 M
Acenaphthylene	<12 µg/kg	TM218		37.3 M	24.1 M	274 M	75.8 M	1710 M	21.8 M
Acenaphthene	<8 µg/kg	TM218		16.1 M	<8 M	<8 M	<8 M	<40 M	<8 M
Fluorene	<10 µg/kg	TM218		27 M	14.1 M	199 M	47 M	1980 M	15.1 M
Phenanthrene	<15 µg/kg	TM218		366 M	171 M	2070 M	516 M	12900 M	166 M
Anthracene	<16 µg/kg	TM218		88.5 M	39.9 M	524 M	143 M	3240 M	37.9 M
Fluoranthene	<17 µg/kg	TM218		672 M	264 M	2920 M	733 M	15400 M	235 M
Pyrene	<15 µg/kg	TM218		550 M	215 M	2140 M	567 M	10900 M	172 M
Benz(a)anthracene	<14 µg/kg	TM218		361 M	143 M	1190 M	320 M	5830 M	98 M
Chrysene	<10 µg/kg	TM218		391 M	156 M	1150 M	336 M	5380 M	104 M
Benzo(b)fluoranthene	<15 µg/kg	TM218		591 M	235 M	1580 M	404 M	6680 M	119 M
Benzo(k)fluoranthene	<14 µg/kg	TM218		208 M	70.9 M	464 M	123 M	2250 M	36.3 M
Benzo(a)pyrene	<15 µg/kg	TM218		371 M	138 M	904 M	227 M	4210 M	69.2 M
Indeno(1,2,3-cd)pyrene	<18 µg/kg	TM218		350 M	143 M	672 M	163 M	2960 M	51.6 M
Dibenzo(a,h)anthracene	<23 µg/kg	TM218		70 M	26.5 M	150 M	37.8 M	655 M	<23 M
Benzo(g,h,i)perylene	<24 µg/kg	TM218		318 M	132 M	627 M	157 M	2720 M	48.3 M
PAH, Total Detected USEPA 16	<118 µg/kg	TM218		4500	1860	15600	4100	78000	1240

Validated

CERTIFICATE OF ANALYSIS

SDG:	210202-91	**Client Reference:**	P18-669	**Report Number:**	590436
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	590434

PAH by GCMS

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	Q20-1	Q20-2	Q21-1	Q21-2	Q22-1	Q22-2
			Depth (m)	0.60 - 0.60	1.80 - 1.80	0.30 - 0.30	1.90 - 1.90	0.30 - 0.30	1.70 - 1.70
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	01/02/2021	01/02/2021	01/02/2021	01/02/2021	01/02/2021	01/02/2021
			Sample Time	.	.	.	.	.	.
			Date Received	02/02/2021	02/02/2021	02/02/2021	02/02/2021	02/02/2021	02/02/2021
			SDG Ref	210202-91	210202-91	210202-91	210202-91	210202-91	210202-91
			Lab Sample No.(s)	23652565	23652571	23652577	23652581	23652618	23652623
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		82.3	82.2	79.7	81.8	79.9	81.2
Acenaphthene-d10 % recovery**	%	TM218		84.6	79.9	81.4	83.4	78.7	79.8
Phenanthrene-d10 % recovery**	%	TM218		84.3	81.5	86	85.2	80.7	81.5
Chrysene-d12 % recovery**	%	TM218		88	73.8	90	89.9	74.3	76.7
Perylene-d12 % recovery**	%	TM218		79.6	70	82.9	85.1	70.1	72.7
Naphthalene	<9 µg/kg	TM218		283 M	80.4 #	475 M	39.1 M	72 M	87.2 M
Acenaphthylene	<12 µg/kg	TM218		<120 M	<12 #	371 M	<12 M	22.8 M	39.8 M
Acenaphthene	<8 µg/kg	TM218		<80 M	<8 #	<8 M	<8 M	27.5 M	9.59 M
Fluorene	<10 µg/kg	TM218		116 M	<10 #	225 M	<10 M	23.3 M	32.5 M
Phenanthrene	<15 µg/kg	TM218		864 M	166 #	2030 M	100 M	295 M	253 M
Anthracene	<16 µg/kg	TM218		233 M	<16 #	547 M	<16 M	65.3 M	61.2 M
Fluoranthene	<17 µg/kg	TM218		1450 M	48.6 #	4190 M	89.7 M	506 M	362 M
Pyrene	<15 µg/kg	TM218		1150 M	35 #	3200 M	67.6 M	438 M	279 M
Benz(a)anthracene	<14 µg/kg	TM218		763 M	20.4 #	2100 M	52 M	257 M	161 M
Chrysene	<10 µg/kg	TM218		866 M	35.5 #	2010 M	76.5 M	323 M	169 M
Benzo(b)fluoranthene	<15 µg/kg	TM218		1190 M	33.6 #	3070 M	77.3 M	459 M	226 M
Benzo(k)fluoranthene	<14 µg/kg	TM218		340 M	<14 #	945 M	22.2 M	142 M	74.4 M
Benzo(a)pyrene	<15 µg/kg	TM218		725 M	<15 #	1930 M	45.2 M	239 M	132 M
Indeno(1,2,3-cd)pyrene	<18 µg/kg	TM218		559 M	<18 #	1540 M	38.3 M	242 M	118 M
Dibenzo(a,h)anthracene	<23 µg/kg	TM218		<230 M	<23 #	354 M	<23 M	49.1 M	<23 M
Benzo(g,h,i)perylene	<24 µg/kg	TM218		549 M	<24 #	1480 M	40.2 M	223 M	110 M
PAH, Total Detected USEPA 16	<118 µg/kg	TM218		9080	420	24500	648	3390	2120

CERTIFICATE OF ANALYSIS

SDG:	210202-91	**Client Reference:**	P18-669	**Report Number:**	590436
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	590434

PAH by GCMS

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	R21-1	R21-2	R21-3	R22-1	R22-2
			Depth (m)	0.30 - 0.30	1.00 - 1.00	2.20 - 2.20	0.20 - 0.20	1.60 - 1.60
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	01/02/2021	01/02/2021	01/02/2021	01/02/2021	01/02/2021
			Sample Time	.	.	.	.	.
			Date Received	02/02/2021	02/02/2021	02/02/2021	02/02/2021	02/02/2021
			SDG Ref	210202-91	210202-91	210202-91	210202-91	210202-91
			Lab Sample No.(s)	23652585	23652589	23652594	23652609	23652613
			AGS Reference					
Naphthalene-d8 % recovery**	%	TM218		80.1	78.6	80.5	87.8	78.5
Acenaphthene-d10 % recovery**	%	TM218		79.9	82.6	82.5	86	81.6
Phenanthrene-d10 % recovery**	%	TM218		82.5	89	82.9	90.5	84.9
Chrysene-d12 % recovery**	%	TM218		79.6	94.8	78.4	111	91.5
Perylene-d12 % recovery**	%	TM218		75	85.5	73.4	102	88.5
Naphthalene	<9 µg/kg	TM218		297 M	609 M	508 M	131 M	146 M
Acenaphthylene	<12 µg/kg	TM218		64.4 M	194 M	184 M	77.6 M	59.3 M
Acenaphthene	<8 µg/kg	TM218		24.7 M	34.5 M	24.3 M	62.6 M	25.4 M
Fluorene	<10 µg/kg	TM218		54 M	154 M	162 M	77 M	47.6 M
Phenanthrene	<15 µg/kg	TM218		433 M	1350 M	1080 M	636 M	420 M
Anthracene	<16 µg/kg	TM218		109 M	364 M	231 M	144 M	132 M
Fluoranthene	<17 µg/kg	TM218		619 M	2020 M	1190 M	1270 M	706 M
Pyrene	<15 µg/kg	TM218		482 M	1510 M	852 M	1000 M	612 M
Benz(a)anthracene	<14 µg/kg	TM218		299 M	1050 M	437 M	701 M	330 M
Chrysene	<10 µg/kg	TM218		337 M	1110 M	454 M	668 M	363 M
Benzo(b)fluoranthene	<15 µg/kg	TM218		428 M	1490 M	576 M	983 M	464 M
Benzo(k)fluoranthene	<14 µg/kg	TM218		158 M	462 M	205 M	351 M	135 M
Benzo(a)pyrene	<15 µg/kg	TM218		243 M	847 M	322 M	553 M	272 M
Indeno(1,2,3-cd)pyrene	<18 µg/kg	TM218		220 M	681 M	281 M	426 M	208 M
Dibenzo(a,h)anthracene	<23 µg/kg	TM218		48 M	161 M	60.1 M	86.2 M	45.2 M
Benzo(g,h,i)perylene	<24 µg/kg	TM218		201 M	628 M	250 M	401 M	198 M
PAH, Total Detected USEPA 16	<118 µg/kg	TM218		4020	12700	6820	7570	4160

Validated

CERTIFICATE OF ANALYSIS

SDG:	210202-91	**Client Reference:**	P18-669	**Report Number:**	590436
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	590434

TPH CWG (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	AJ21-1	AJ21-2	AK21-1	AK21-2	AK22-1	AK22-2
			Depth (m)	0.30 - 0.30	1.30 - 1.30	0.50 - 0.50	1.20 - 1.20	0.50 - 0.50	1.60 - 1.60
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	29/01/2021	29/01/2021	29/01/2021	29/01/2021	29/01/2021	29/01/2021
			Sample Time	.	.	.	.	.	.
			Date Received	02/02/2021	02/02/2021	02/02/2021	02/02/2021	02/02/2021	02/02/2021
			SDG Ref	210202-91	210202-91	210202-91	210202-91	210202-91	210202-91
			Lab Sample No.(s)	23652632	23652638	23652642	23652650	23652548	23652599
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		79.6	133 4	92.7	51.1 4	58.1 4	72.4
Aliphatics >C5-C6	<10 µg/kg	TM089		<10	<10 4	<10	<10 4	<10 4	<10
Aliphatics >C6-C8	<10 µg/kg	TM089		<10	<10 4	<10	<10 4	<10 4	<10
Aliphatics >C8-C10	<10 µg/kg	TM089		<10	<10 4	<10	<10 4	<10 4	<10
Aliphatics >C10-C12	<1000 µg/kg	TM414		<1000	<1000	<1000	<10000	<1000	<1000
Aliphatics >C12-C16	<1000 µg/kg	TM414		<1000	<1000	<1000	<10000	<1000	<1000
Aliphatics >C16-C21	<1000 µg/kg	TM414		1110	<1000	<1000	27600	4250	1270
Aliphatics >C21-C35	<1000 µg/kg	TM414		2410	<1000	<1000	1010000	12600	3580
Aliphatics >C35-C44	<1000 µg/kg	TM414		<1000	<1000	<1000	1330000	1870	<1000
Total Aliphatics >C10-C44	<5000 µg/kg	TM414		<5000	<5000	<5000	2370000	19000	5230
Total Aliphatics & Aromatics >C10-C44	<10000 µg/kg	TM414		62700	<10000	<10000	3400000	49500	24600
Aromatics >EC5-EC7	<10 µg/kg	TM089		<10	<10 4	<10	<10 4	<10 4	<10
Aromatics >EC7-EC8	<10 µg/kg	TM089		<10	<10 4	<10	<10 4	<10 4	<10
Aromatics >EC8-EC10	<10 µg/kg	TM089		<10	<10 4	<10	<10 4	<10 4	<10
Aromatics > EC10-EC12	<1000 µg/kg	TM414		<1000	<1000	<1000	<10000	<1000	<1000
Aromatics > EC12-EC16	<1000 µg/kg	TM414		<1000	<1000	<1000	<10000	<1000	<1000
Aromatics > EC16-EC21	<1000 µg/kg	TM414		2260	3770	<1000	18800	4960	2270
Aromatics > EC21-EC35	<1000 µg/kg	TM414		43200	3670	<1000	930000	21400	8870
Aromatics >EC35-EC44	<1000 µg/kg	TM414		12600	<1000	<1000	85300	3540	7870
Aromatics > EC40-EC44	<1000 µg/kg	TM414		1530	<1000	<1000	<10000	<1000	4210
Total Aromatics > EC10-EC44	<5000 µg/kg	TM414		58100	8500	<5000	1030000	30500	19400
Total Aliphatics & Aromatics >C5-C44	<10000 µg/kg	TM414		58100	<10000	<10000	3400000	49500	24600
Total Aliphatics >C5-C10	<50 µg/kg	TM089		<50	<50 4	<50	<50 4	<50 4	<50
Total Aromatics >EC5-EC10	<50 µg/kg	TM089		<50	<50 4	<50	<50 4	<50 4	<50
GRO >C5-C10	<20 µg/kg	TM089		<20	<20 4	<20	<20 4	<20 4	<20

Validated

CERTIFICATE OF ANALYSIS

SDG:	210202-91	**Client Reference:**	P18-669	**Report Number:**	590436
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	590434

TPH CWG (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	AL21-1	AL21-2	P20-1	P20-2	P21-1	P21-2
			Depth (m)	0.50 - 0.50	1.40 - 1.40	0.50 - 0.50	1.30 - 1.30	0.30 - 0.30	1.50 - 1.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	29/01/2021	29/01/2021	01/02/2021	01/02/2021	01/02/2021	01/02/2021
			Sample Time	.	.	.	.	.	.
			Date Received	02/02/2021	02/02/2021	02/02/2021	02/02/2021	02/02/2021	02/02/2021
			SDG Ref	210202-91	210202-91	210202-91	210202-91	210202-91	210202-91
			Lab Sample No.(s)	23652657	23652664	23652671	23652552	23652557	23652561
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		63.6 4	107	38.7 4	60.5 4	31.4 4	80.4
Aliphatics >C5-C6	<10 µg/kg	TM089		<10 4	<10	<10 4	<10 4	<10 4	<10
Aliphatics >C6-C8	<10 µg/kg	TM089		<10 4	<10	23.3 4	29.7 4	<10 4	<10
Aliphatics >C8-C10	<10 µg/kg	TM089		<10 4	<10	22.2 4	36.1 4	<10 4	<10
Aliphatics >C10-C12	<1000 µg/kg	TM414		<1000	<1000	<1000	<1000	<1000	<1000
Aliphatics >C12-C16	<1000 µg/kg	TM414		2020	<1000	1290	1290	2650	<1000
Aliphatics >C16-C21	<1000 µg/kg	TM414		6330	<1000	6190	5960	15100	<1000
Aliphatics >C21-C35	<1000 µg/kg	TM414		28000	2290	41300	23700	49900	5370
Aliphatics >C35-C44	<1000 µg/kg	TM414		2020	<1000	11000	5390	19100	<1000
Total Aliphatics >C10-C44	<5000 µg/kg	TM414		39200	<5000	59800	36300	86800	5800
Total Aliphatics & Aromatics >C10-C44	<10000 µg/kg	TM414		123000	40800	101000	54900	160000	<10000
Aromatics >EC5-EC7	<10 µg/kg	TM089		<10 4	<10	<10 4	<10 4	<10 4	<10
Aromatics >EC7-EC8	<10 µg/kg	TM089		<10 4	<10	<10 4	<10 4	<10 4	<10
Aromatics >EC8-EC10	<10 µg/kg	TM089		<10 4	<10	14.4 4	24.5 4	<10 4	<10
Aromatics > EC10-EC12	<1000 µg/kg	TM414		<1000	<1000	<1000	<1000	1000	<1000
Aromatics > EC12-EC16	<1000 µg/kg	TM414		<1000	<1000	1880	<1000	3450	<1000
Aromatics > EC16-EC21	<1000 µg/kg	TM414		6460	<1000	10000	2190	14700	<1000
Aromatics > EC21-EC35	<1000 µg/kg	TM414		53100	25800	27400	15000	49800	1610
Aromatics >EC35-EC44	<1000 µg/kg	TM414		22800	11400	1320	<1000	4550	<1000
Aromatics > EC40-EC44	<1000 µg/kg	TM414		5060	2010	<1000	<1000	1430	<1000
Total Aromatics > EC10-EC44	<5000 µg/kg	TM414		83400	37900	41500	18600	73500	<5000
Total Aliphatics & Aromatics >C5-C44	<10000 µg/kg	TM414		123000	37900	101000	55000	160000	<10000
Total Aliphatics >C5-C10	<50 µg/kg	TM089		<50 4	<50	<50 4	65.8 4	<50 4	<50
Total Aromatics >EC5-EC10	<50 µg/kg	TM089		<50 4	<50	<50 4	<50 4	<50 4	<50
GRO >C5-C10	<20 µg/kg	TM089		<20 4	<20	<20 4	65.8 4	<20 4	<20

Validated

CERTIFICATE OF ANALYSIS

SDG:	210202-91	**Client Reference:**	P18-669	**Report Number:**	590436
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	590434

TPH CWG (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	Q20-1	Q20-2	Q21-1	Q21-2	Q22-1	Q22-2
			Depth (m)	0.60 - 0.60	1.80 - 1.80	0.30 - 0.30	1.90 - 1.90	0.30 - 0.30	1.70 - 1.70
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	01/02/2021	01/02/2021	01/02/2021	01/02/2021	01/02/2021	01/02/2021
			Sample Time	.	.	.	.	.	.
			Date Received	02/02/2021	02/02/2021	02/02/2021	02/02/2021	02/02/2021	02/02/2021
			SDG Ref	210202-91	210202-91	210202-91	210202-91	210202-91	210202-91
			Lab Sample No.(s)	23652565	23652571	23652577	23652581	23652618	23652623
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		68.6 4	72	49.5 4	79.3	118	118
Aliphatics >C5-C6	<10 µg/kg	TM089		<10 4	<10	<10 4	<10	<10	<10
Aliphatics >C6-C8	<10 µg/kg	TM089		<10 4	<10	<10 4	<10	<10	<10
Aliphatics >C8-C10	<10 µg/kg	TM089		<10 4	<10	<10 4	<10	<10	<10
Aliphatics >C10-C12	<1000 µg/kg	TM414		<1000	<1000	<1000	<1000	<1000	<1000
Aliphatics >C12-C16	<1000 µg/kg	TM414		2330	<1000	<1000	<1000	1260	<1000
Aliphatics >C16-C21	<1000 µg/kg	TM414		14300	<1000	1390	<1000	11700	<1000
Aliphatics >C21-C35	<1000 µg/kg	TM414		73900	<1000	13800	2530	76800	7910
Aliphatics >C35-C44	<1000 µg/kg	TM414		35400	<1000	2230	<1000	26100	<1000
Total Aliphatics >C10-C44	<5000 µg/kg	TM414		126000	<5000	17900	<5000	116000	8850
Total Aliphatics & Aromatics >C10-C44	<10000 µg/kg	TM414		169000	<10000	138000	<10000	133000	15100
Aromatics >EC5-EC7	<10 µg/kg	TM089		<10 4	<10	<10 4	<10	<10	<10
Aromatics >EC7-EC8	<10 µg/kg	TM089		<10 4	<10	<10 4	<10	<10	<10
Aromatics >EC8-EC10	<10 µg/kg	TM089		<10 4	<10	<10 4	<10	<10	<10
Aromatics > EC10-EC12	<1000 µg/kg	TM414		<1000	<1000	<1000	<1000	<1000	<1000
Aromatics > EC12-EC16	<1000 µg/kg	TM414		<1000	<1000	2590	<1000	<1000	<1000
Aromatics > EC16-EC21	<1000 µg/kg	TM414		4300	<1000	32200	<1000	1390	1010
Aromatics > EC21-EC35	<1000 µg/kg	TM414		35300	<1000	76000	2230	14700	4240
Aromatics >EC35-EC44	<1000 µg/kg	TM414		3160	<1000	8600	<1000	<1000	<1000
Aromatics > EC40-EC44	<1000 µg/kg	TM414		<1000	<1000	<1000	<1000	<1000	<1000
Total Aromatics > EC10-EC44	<5000 µg/kg	TM414		43600	<5000	120000	<5000	17300	6260
Total Aliphatics & Aromatics >C5-C44	<10000 µg/kg	TM414		169000	<10000	138000	<10000	133000	15100
Total Aliphatics >C5-C10	<50 µg/kg	TM089		<50 4	<50	<50 4	<50	<50	<50
Total Aromatics >EC5-EC10	<50 µg/kg	TM089		<50 4	<50	<50 4	<50	<50	<50
GRO >C5-C10	<20 µg/kg	TM089		<20 4	<20	<20 4	<20	<20	<20

CERTIFICATE OF ANALYSIS

SDG:	210202-91	**Client Reference:**	P18-669	**Report Number:**	590436
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	590434

TPH CWG (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	R21-1	R21-2	R21-3	R22-1	R22-2
			Depth (m)	0.30 - 0.30	1.00 - 1.00	2.20 - 2.20	0.20 - 0.20	1.60 - 1.60
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	01/02/2021	01/02/2021	01/02/2021	01/02/2021	01/02/2021
			Sample Time	.	.	.	.	.
			Date Received	02/02/2021	02/02/2021	02/02/2021	02/02/2021	02/02/2021
			SDG Ref	210202-91	210202-91	210202-91	210202-91	210202-91
			Lab Sample No.(s)	23652585	23652589	23652594	23652609	23652613
			AGS Reference					
GRO Surrogate % recovery**	%	TM089		82.1	25.9 4	71.5	98.6	72.2
Aliphatics >C5-C6	<10 µg/kg	TM089		<10	<10 4	13.4	<10	<10
Aliphatics >C6-C8	<10 µg/kg	TM089		41.7	<10 4	61.6	<10	<10
Aliphatics >C8-C10	<10 µg/kg	TM089		38.4	<10 4	67.2	<10	<10
Aliphatics >C10-C12	<1000 µg/kg	TM414		1220	<1000	<1000	<1000	<1000
Aliphatics >C12-C16	<1000 µg/kg	TM414		8050	1530	1210	3470	1330
Aliphatics >C16-C21	<1000 µg/kg	TM414		19800	7720	5090	16200	47600
Aliphatics >C21-C35	<1000 µg/kg	TM414		76100	35700	25100	94200	22800
Aliphatics >C35-C44	<1000 µg/kg	TM414		30000	10500	8860	42400	12500
Total Aliphatics >C10-C44	<5000 µg/kg	TM414		135000	55500	40200	156000	84200
Total Aliphatics & Aromatics >C10-C44	<10000 µg/kg	TM414		189000	81600	68800	190000	150000
Aromatics >EC5-EC7	<10 µg/kg	TM089		<10	<10 4	<10	<10	<10
Aromatics >EC7-EC8	<10 µg/kg	TM089		12.1	<10 4	<10	<10	<10
Aromatics >EC8-EC10	<10 µg/kg	TM089		25.2	<10 4	44.8	<10	<10
Aromatics > EC10-EC12	<1000 µg/kg	TM414		<1000	<1000	<1000	<1000	<1000
Aromatics > EC12-EC16	<1000 µg/kg	TM414		3640	<1000	<1000	<1000	<1000
Aromatics > EC16-EC21	<1000 µg/kg	TM414		11000	4110	3750	3490	12900
Aromatics > EC21-EC35	<1000 µg/kg	TM414		36300	19800	20900	28300	41600
Aromatics >EC35-EC44	<1000 µg/kg	TM414		2150	1530	2890	1300	10400
Aromatics > EC40-EC44	<1000 µg/kg	TM414		<1000	<1000	1120	<1000	2650
Total Aromatics > EC10-EC44	<5000 µg/kg	TM414		53700	26200	28600	33500	65900
Total Aliphatics & Aromatics >C5-C44	<10000 µg/kg	TM414		189000	81600	69000	190000	150000
Total Aliphatics >C5-C10	<50 µg/kg	TM089		80.1	<50 4	142	<50	<50
Total Aromatics >EC5-EC10	<50 µg/kg	TM089		<50	<50 4	<50	<50	<50
GRO >C5-C10	<20 µg/kg	TM089		80.1	<20 4	142	<20	<20

Validated

CERTIFICATE OF ANALYSIS

SDG:	210202-91	**Client Reference:**	P18-669	**Report Number:**	590436
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	590434

VOC MS (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	AJ21-1	AJ21-2	AK21-1	AK21-2	AK22-1	AK22-2
			Depth (m)	0.30 - 0.30	1.30 - 1.30	0.50 - 0.50	1.20 - 1.20	0.50 - 0.50	1.60 - 1.60
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	29/01/2021	29/01/2021	29/01/2021	29/01/2021	29/01/2021	29/01/2021
			Sample Time	.	.	.	.	.	.
			Date Received	02/02/2021	02/02/2021	02/02/2021	02/02/2021	02/02/2021	02/02/2021
			SDG Ref	210202-91	210202-91	210202-91	210202-91	210202-91	210202-91
			Lab Sample No.(s)	23652632	23652638	23652642	23652650	23652548	23652599
			AGS Reference						
Dibromofluoromethane**	%	TM116		116	112	115	118	106	109
Toluene-d8**	%	TM116		96	99.1	98.3	93.2	97.3	99.1
4-Bromofluorobenzene**	%	TM116		95.7	96.5	97.8	88.1	90	97.6
Methyl Tertiary Butyl Ether	<10 µg/kg	TM116		<200 M	<200 M	<200 M	<200 M	<200 M	<200 M
Benzene	<9 µg/kg	TM116		<180 M	<180 M	<180 M	<180 M	<180 M	<180 M
Toluene	<7 µg/kg	TM116		<140 M	<140 M	<140 M	<140 M	<140 M	<140 M
Ethylbenzene	<4 µg/kg	TM116		<80 M	<80 M	<80 M	<80 M	<80 M	<80 M
p/m-Xylene	<10 µg/kg	TM116		<200 #	<200 #	<200 #	<200 #	<200 #	<200 #
o-Xylene	<10 µg/kg	TM116		<200 M	<200 M	<200 M	<200 M	<200 M	<200 M
Naphthalene	<13 µg/kg	TM116		<260 M	<260 M	<260 M	<260 M	<260 M	<260 M
Sum of Detected Xylenes	<0.02 mg/kg	TM116		<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Sum of BTEX	<40 µg/kg	TM116		<800	<800	<800	<800	<800	<800

Validated

CERTIFICATE OF ANALYSIS

SDG:	210202-91	**Client Reference:**	P18-669	**Report Number:**	590436
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	590434

VOC MS (S)

Results Legend	
#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	AL21-1	AL21-2	P20-1	P20-2	P21-1	P21-2
			Depth (m)	0.50 - 0.50	1.40 - 1.40	0.50 - 0.50	1.30 - 1.30	0.30 - 0.30	1.50 - 1.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	29/01/2021	29/01/2021	01/02/2021	01/02/2021	01/02/2021	01/02/2021
			Sample Time	.	.	.	.	.	.
			Date Received	02/02/2021	02/02/2021	02/02/2021	02/02/2021	02/02/2021	02/02/2021
			SDG Ref	210202-91	210202-91	210202-91	210202-91	210202-91	210202-91
			Lab Sample No.(s)	23652657	23652664	23652671	23652552	23652557	23652561
			AGS Reference						
Dibromofluoromethane**	%	TM116		116	110	100	100	99.3	111
Toluene-d8**	%	TM116		95.3	98	94.7	96.8	92.9	99.5
4-Bromofluorobenzene**	%	TM116		88.1	94.5	87.6	88	85.4	94.7
Methyl Tertiary Butyl Ether	<10 µg/kg	TM116		<200 M	<200 M	<200 M	<200 M	<200 M	<200 M
Benzene	<9 µg/kg	TM116		<180 M	<180 M	<180 M	<180 M	<180 M	<180 M
Toluene	<7 µg/kg	TM116		<140 M	<140 M	<140 M	<140 M	<140 M	<140 M
Ethylbenzene	<4 µg/kg	TM116		<80 M	<80 M	<80 M	<80 M	<80 M	<80 M
p/m-Xylene	<10 µg/kg	TM116		<200 #	<200 #	<200 #	<200 #	<200 #	<200 #
o-Xylene	<10 µg/kg	TM116		<200 M	<200 M	<200 M	<200 M	<200 M	<200 M
Naphthalene	<13 µg/kg	TM116		<260 M	<260 M	441 M	<260 M	320 M	<260 M
Sum of Detected Xylenes	<0.02 mg/kg	TM116		<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Sum of BTEX	<40 µg/kg	TM116		<800	<800	<800	<800	<800	<800

CERTIFICATE OF ANALYSIS

SDG:	210202-91	**Client Reference:**	P18-669	**Report Number:**	590436
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	590434

VOC MS (S)

Results Legend	
#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	Q20-1	Q20-2	Q21-1	Q21-2	Q22-1	Q22-2
			Depth (m)	0.60 - 0.60	1.80 - 1.80	0.30 - 0.30	1.90 - 1.90	0.30 - 0.30	1.70 - 1.70
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	01/02/2021	01/02/2021	01/02/2021	01/02/2021	01/02/2021	01/02/2021
			Sample Time	.	.	.	.	.	.
			Date Received	02/02/2021	02/02/2021	02/02/2021	02/02/2021	02/02/2021	02/02/2021
			SDG Ref	210202-91	210202-91	210202-91	210202-91	210202-91	210202-91
			Lab Sample No.(s)	23652565	23652571	23652577	23652581	23652618	23652623
			AGS Reference						
Dibromofluoromethane**	%	TM116		106	113	102	113	110	112
Toluene-d8**	%	TM116		94.5	100	95.2	99.7	98.4	99.1
4-Bromofluorobenzene**	%	TM116		90.6	87.6	89.1	93.2	100	96.4
Methyl Tertiary Butyl Ether	<10 µg/kg	TM116		<200 M	<200 #	<200 M	<200 M	<200 M	<200 M
Benzene	<9 µg/kg	TM116		<180 M	<180 #	<180 M	<180 M	<180 M	<180 M
Toluene	<7 µg/kg	TM116		<140 M	<140 #	<140 M	<140 M	<140 M	<140 M
Ethylbenzene	<4 µg/kg	TM116		<80 M	<80 #	<80 M	<80 M	<80 M	<80 M
p/m-Xylene	<10 µg/kg	TM116		<200 #	<200 #	<200 #	<200 #	<200 #	<200 #
o-Xylene	<10 µg/kg	TM116		<200 M	<200 #	<200 M	<200 M	<200 M	<200 M
Naphthalene	<13 µg/kg	TM116		286 M	<260 #	<260 M	<260 M	<260 M	<260 M
Sum of Detected Xylenes	<0.02 mg/kg	TM116		<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Sum of BTEX	<40 µg/kg	TM116		<800	<800	<800	<800	<800	<800

CERTIFICATE OF ANALYSIS

SDG:	210202-91	**Client Reference:**	P18-669	**Report Number:**	590436
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	590434

VOC MS (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	R21-1	R21-2	R21-3	R22-1	R22-2
			Depth (m)	0.30 - 0.30	1.00 - 1.00	2.20 - 2.20	0.20 - 0.20	1.60 - 1.60
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	01/02/2021	01/02/2021	01/02/2021	01/02/2021	01/02/2021
			Sample Time	.	.	.	.	.
			Date Received	02/02/2021	02/02/2021	02/02/2021	02/02/2021	02/02/2021
			SDG Ref	210202-91	210202-91	210202-91	210202-91	210202-91
			Lab Sample No.(s)	23652585	23652589	23652594	23652609	23652613
			AGS Reference					
Dibromofluoromethane**	%	TM116		116	105	105	112	109
Toluene-d8**	%	TM116		96.2	94.1	95	99.4	97.7
4-Bromofluorobenzene**	%	TM116		95.4	79.1	87.6	94.7	94.2
Methyl Tertiary Butyl Ether	<10 µg/kg	TM116		<200 M	<200 M	<200 M	<200 M	<200 M
Benzene	<9 µg/kg	TM116		<180 M	<180 M	<180 M	<180 M	<180 M
Toluene	<7 µg/kg	TM116		<140 M	<140 M	<140 M	<140 M	<140 M
Ethylbenzene	<4 µg/kg	TM116		<80 M	<80 M	<80 M	<80 M	<80 M
p/m-Xylene	<10 µg/kg	TM116		<200 #	<200 #	<200 #	<200 #	<200 #
o-Xylene	<10 µg/kg	TM116		<200 M	<200 M	<200 M	<200 M	<200 M
Naphthalene	<13 µg/kg	TM116		<260 M	<260 M	<260 M	<260 M	<260 M
Sum of Detected Xylenes	<0.02 mg/kg	TM116		<0.4	<0.4	<0.4	<0.4	<0.4
Sum of BTEX	<40 µg/kg	TM116		<800	<800	<800	<800	<800

CERTIFICATE OF ANALYSIS

SDG:	210202-91	**Client Reference:**	P18-669	**Report Number:**	590436
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	590434

Asbestos Identification - Solid Samples

Results Legend

#	ISO17025 accredited.
M	*m*CERTS accredited.
*	Subcontracted test.
(F)	Trigger breach confirmed
1-5&+$@	Sample deviation (see appendix)

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthophyllite	Fibrous Tremolite	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	AJ21-1 0.30 - 0.30 SOLID 29/01/2021 00:00:00 02/02/2021 05:00:00 210202-91 23652632 TM048	09/02/2021	Marcin Magdziarek	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	AK21-1 0.50 - 0.50 SOLID 29/01/2021 00:00:00 02/02/2021 05:00:00 210202-91 23652642 TM048	08/02/2021	Paul Poynton	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	AK22-1 0.50 - 0.50 SOLID 29/01/2021 00:00:00 02/02/2021 05:00:00 210202-91 23652548 TM048	08/02/2021	Marcin Magdziarek	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	AL21-1 0.50 - 0.50 SOLID 29/01/2021 00:00:00 02/02/2021 05:00:00 210202-91 23652657 TM048	08/02/21	Eva Guerra	bundle of fibres in soil	Not Detected (#)	Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	P20-1 0.50 - 0.50 SOLID 01/02/2021 00:00:00 02/02/2021 05:00:00 210202-91 23652671 TM048	08/02/2021	Paul Poynton	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	P21-1 0.30 - 0.30 SOLID 01/02/2021 00:00:00 02/02/2021 05:00:00 210202-91 23652557 TM048	08/02/2021	Paul Poynton	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	Q20-1 0.60 - 0.60 SOLID 01/02/2021 00:00:00 02/02/2021 05:00:00 210202-91 23652565 TM048	09/02/2021	Marcin Magdziarek	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	Q21-1 0.30 - 0.30 SOLID 01/02/2021 00:00:00 02/02/2021 05:00:00 210202-91 23652577 TM048	08/02/2021	James Richards	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected

Validated

CERTIFICATE OF ANALYSIS

SDG:	210202-91	**Client Reference:**	P18-669	**Report Number:**	590436
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	590434

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthophyllite	Fibrous Tremolite	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	Q22-2 1.70 - 1.70 SOLID 01/02/2021 00:00:00 02/02/2021 05:00:00 210202-91 23652623 TM048	09/02/2021	Marcin Magdziarek	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	R21-1 0.30 - 0.30 SOLID 01/02/2021 00:00:00 02/02/2021 05:00:00 210202-91 23652585 TM048	09/02/2021	Marcin Magdziarek	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	R21-3 2.20 - 2.20 SOLID 01/02/2021 00:00:00 02/02/2021 05:00:00 210202-91 23652594 TM048	09/02/2021	Marcin Magdziarek	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	R22-2 1.60 - 1.60 SOLID 01/02/2021 00:00:00 02/02/2021 05:00:00 210202-91 23652613 TM048	08/02/2021	Paul Poynton	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected

CERTIFICATE OF ANALYSIS

SDG:	210202-91	**Client Reference:**	P18-669	**Report Number:**	590436
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	590434

Asbestos Quantification - Full

Results Legend

#	ISO17025 accredited.
M	*m*CERTS accredited.
*	Subcontracted test.
(F)	Trigger breach confirmed
1-5&♦§@	Sample deviation (see appendix)

		Additional Asbestos Components	Analysts Comments	Asbestos Quantification - Gravimetric - %	Asbestos Quantification - PCOM	Asbestos Quantification - Total - %
Cust. Sample Ref.	AL21-1	None (#)	ACM debris in soil	0.0203 (#)	<0.001 (#)	0.0203 (#)
Depth (m)	0.50 - 0.50					
Sample Type	SOLID					
Date Sampled	29/01/2021 00:00:00					
Date Receieved	02/02/2021 05:00:00					
SDG	210202-91					
Original Sample	23652657					
Method Number	TM304					

Table of Results - Appendix

Method No	Reference	Description
PM024	Modified BS 1377	Soil preparation including homogenisation, moisture screens of soils for Asbestos Containing Material
TM024	Method 4500A & B, AWWA/APHA, 20th Ed., 1999	Determination of Exchangeable Ammonium and Ammoniacal Nitrogen as N by titration on solids
TM048	HSG 248, Asbestos: The analysts' guide for sampling, analysis and clearance procedures	Identification of Asbestos in Bulk Material
TM062 (S)	National Grid Property Holdings Methods for the Collection & Analysis of Samples from National Grid Sites version 1 Sec 3.9	Determination of Phenols in Soils by HPLC
TM089	Modified: US EPA Methods 8020 & 602	Determination of Gasoline Range Hydrocarbons (GRO) by Headspace GC-FID (C4-C12)
TM116	Modified: US EPA Method 8260, 8120, 8020, 624, 610 & 602	Determination of Volatile Organic Compounds by Headspace / GC-MS
TM132	In - house Method	ELTRA CS800 Operators Guide
TM133	BS 1377: Part 3 1990;BS 6068-2.5	Determination of pH in Soil and Water using the GLpH pH Meter
TM153	Method 4500A,B,C, I, M AWWA/APHA, 20th Ed., 1999	Determination of Total Cyanide, Free (Easily Liberatable) Cyanide and Thiocyanate using the Skalar SANS+ System Segmented Flow Analyser
TM181	US EPA Method 6010B	Determination of Routine Metals in Soil by iCap 6500 Duo ICP-OES
TM218	Shaker extraction - EPA method 3546.	The determination of PAH in soil samples by GC-MS
TM304	HSE Contract research Report no 83/1996	Asbestos Quantification in Soil: Fibres identified by morphology only
TM414	Analysis of Petroleum Hydrocarbons in Environmental Media – Total Petroleum Hydrocarbon Criteria	Determination of Speciated Extractable Petroleum Hydrocarbons in Soils by GCxGC-FID

NA = not applicable.

Chemical testing (unless subcontracted) performed at ALS Life Sciences Ltd Hawarden (Method codes TM) or ALS Life Sciences Ltd Aberdeen (Method codes S).

CERTIFICATE OF ANALYSIS

SDG:	210202-91	**Client Reference:**	P18-669	**Report Number:**	590436
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	590434

Test Completion Dates

Lab Sample No(s)	23652632	23652638	23652642	23652650	23652548	23652599	23652657	23652664	23652671	23652552
Customer Sample Ref.	AJ21-1	AJ21-2	AK21-1	AK21-2	AK22-1	AK22-2	AL21-1	AL21-2	P20-1	P20-2
AGS Ref.										
Depth	0.30 - 0.30	1.30 - 1.30	0.50 - 0.50	1.20 - 1.20	0.50 - 0.50	1.60 - 1.60	0.50 - 0.50	1.40 - 1.40	0.50 - 0.50	1.30 - 1.30
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
Ammonium Soil by Titration	09-Feb-2021	09-Feb-2021	09-Feb-2021	09-Feb-2021	09-Feb-2021	09-Feb-2021	09-Feb-2021	09-Feb-2021	09-Feb-2021	09-Feb-2021
Asbestos ID in Solid Samples	09-Feb-2021		08-Feb-2021		08-Feb-2021		08-Feb-2021		08-Feb-2021	
Asbestos Quantification - Full							12-Mar-2021			
Cyanide Comp/Free/Total/Thiocyanate	05-Feb-2021	05-Feb-2021	05-Feb-2021	05-Feb-2021	05-Feb-2021	05-Feb-2021	05-Feb-2021	05-Feb-2021	05-Feb-2021	05-Feb-2021
EPH CWG GC (S)	08-Feb-2021	08-Feb-2021	08-Feb-2021	08-Feb-2021	08-Feb-2021	08-Feb-2021	05-Feb-2021	08-Feb-2021	08-Feb-2021	08-Feb-2021
GRO by GC-FID (S)	09-Feb-2021	09-Feb-2021	09-Feb-2021	09-Feb-2021	09-Feb-2021	09-Feb-2021	09-Feb-2021	09-Feb-2021	09-Feb-2021	09-Feb-2021
Metals in solid samples by OES	09-Feb-2021	09-Feb-2021	09-Feb-2021	09-Feb-2021	09-Feb-2021	09-Feb-2021	08-Feb-2021	08-Feb-2021	09-Feb-2021	08-Feb-2021
PAH by GCMS	05-Feb-2021	05-Feb-2021	05-Feb-2021	04-Feb-2021	05-Feb-2021	05-Feb-2021	04-Feb-2021	04-Feb-2021	05-Feb-2021	05-Feb-2021
pH	04-Feb-2021	03-Feb-2021	04-Feb-2021	03-Feb-2021	04-Feb-2021	03-Feb-2021	04-Feb-2021	03-Feb-2021	04-Feb-2021	04-Feb-2021
Phenols by HPLC (S)	10-Feb-2021	10-Feb-2021	10-Feb-2021	09-Feb-2021	09-Feb-2021	10-Feb-2021	12-Feb-2021	10-Feb-2021	10-Feb-2021	10-Feb-2021
Sample description	03-Feb-2021	03-Feb-2021	03-Feb-2021	03-Feb-2021	03-Feb-2021	03-Feb-2021	02-Feb-2021	03-Feb-2021	03-Feb-2021	03-Feb-2021
Total Organic Carbon	09-Feb-2021	09-Feb-2021	09-Feb-2021	09-Feb-2021	09-Feb-2021	09-Feb-2021	09-Feb-2021	09-Feb-2021	09-Feb-2021	09-Feb-2021
TPH CWG GC (S)	09-Feb-2021	09-Feb-2021	09-Feb-2021	09-Feb-2021	09-Feb-2021	09-Feb-2021	09-Feb-2021	09-Feb-2021	09-Feb-2021	09-Feb-2021
VOC MS (S)	09-Feb-2021	08-Feb-2021	09-Feb-2021	09-Feb-2021	09-Feb-2021	09-Feb-2021	09-Feb-2021	09-Feb-2021	09-Feb-2021	09-Feb-2021

Lab Sample No(s)	23652557	23652561	23652565	23652571	23652577	23652581	23652618	23652623	23652585	23652589
Customer Sample Ref.	P21-1	P21-2	Q20-1	Q20-2	Q21-1	Q21-2	Q22-1	Q22-2	R21-1	R21-2
AGS Ref.										
Depth	0.30 - 0.30	1.50 - 1.50	0.60 - 0.60	1.80 - 1.80	0.30 - 0.30	1.90 - 1.90	0.30 - 0.30	1.70 - 1.70	0.30 - 0.30	1.00 - 1.00
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
Ammonium Soil by Titration	09-Feb-2021	09-Feb-2021	09-Feb-2021	09-Feb-2021	09-Feb-2021	09-Feb-2021	09-Feb-2021	09-Feb-2021	09-Feb-2021	09-Feb-2021
Asbestos ID in Solid Samples	08-Feb-2021		09-Feb-2021		08-Feb-2021			09-Feb-2021	09-Feb-2021	
Cyanide Comp/Free/Total/Thiocyanate	05-Feb-2021	05-Feb-2021	05-Feb-2021	05-Feb-2021	05-Feb-2021	05-Feb-2021	05-Feb-2021	05-Feb-2021	05-Feb-2021	05-Feb-2021
EPH CWG GC (S)	08-Feb-2021	08-Feb-2021	08-Feb-2021	08-Feb-2021	08-Feb-2021	08-Feb-2021	08-Feb-2021	08-Feb-2021	05-Feb-2021	08-Feb-2021
GRO by GC-FID (S)	09-Feb-2021	09-Feb-2021	09-Feb-2021	09-Feb-2021	09-Feb-2021	09-Feb-2021	09-Feb-2021	09-Feb-2021	09-Feb-2021	09-Feb-2021
Metals in solid samples by OES	09-Feb-2021	09-Feb-2021	09-Feb-2021	09-Feb-2021	09-Feb-2021	08-Feb-2021	09-Feb-2021	09-Feb-2021	08-Feb-2021	09-Feb-2021
PAH by GCMS	05-Feb-2021	05-Feb-2021	05-Feb-2021	04-Feb-2021	05-Feb-2021	05-Feb-2021	04-Feb-2021	04-Feb-2021	04-Feb-2021	05-Feb-2021
pH	04-Feb-2021	04-Feb-2021	04-Feb-2021	03-Feb-2021	04-Feb-2021	03-Feb-2021	04-Feb-2021	04-Feb-2021	04-Feb-2021	03-Feb-2021
Phenols by HPLC (S)	10-Feb-2021	12-Feb-2021	12-Feb-2021	09-Feb-2021	10-Feb-2021	09-Feb-2021	10-Feb-2021	12-Feb-2021	12-Feb-2021	10-Feb-2021
Sample description	03-Feb-2021	03-Feb-2021	03-Feb-2021	03-Feb-2021	03-Feb-2021	03-Feb-2021	03-Feb-2021	03-Feb-2021	02-Feb-2021	03-Feb-2021
Total Organic Carbon	09-Feb-2021	09-Feb-2021	09-Feb-2021	09-Feb-2021	09-Feb-2021	09-Feb-2021	09-Feb-2021	09-Feb-2021	09-Feb-2021	09-Feb-2021
TPH CWG GC (S)	09-Feb-2021	09-Feb-2021	09-Feb-2021	09-Feb-2021	09-Feb-2021	09-Feb-2021	09-Feb-2021	09-Feb-2021	09-Feb-2021	09-Feb-2021
VOC MS (S)	09-Feb-2021	08-Feb-2021	09-Feb-2021	08-Feb-2021	09-Feb-2021	08-Feb-2021	09-Feb-2021	09-Feb-2021	09-Feb-2021	08-Feb-2021

Lab Sample No(s)	23652594	23652609	23652613
Customer Sample Ref.	R21-3	R22-1	R22-2
AGS Ref.			
Depth	2.20 - 2.20	0.20 - 0.20	1.60 - 1.60
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
Ammonium Soil by Titration	09-Feb-2021	09-Feb-2021	09-Feb-2021
Asbestos ID in Solid Samples	09-Feb-2021		08-Feb-2021
Cyanide Comp/Free/Total/Thiocyanate	05-Feb-2021	05-Feb-2021	05-Feb-2021
EPH CWG GC (S)	08-Feb-2021	08-Feb-2021	08-Feb-2021
GRO by GC-FID (S)	09-Feb-2021	10-Feb-2021	09-Feb-2021
Metals in solid samples by OES	09-Feb-2021	09-Feb-2021	09-Feb-2021
PAH by GCMS	04-Feb-2021	09-Feb-2021	05-Feb-2021
pH	04-Feb-2021	03-Feb-2021	04-Feb-2021
Phenols by HPLC (S)	10-Feb-2021	10-Feb-2021	10-Feb-2021
Sample description	03-Feb-2021	03-Feb-2021	03-Feb-2021
Total Organic Carbon	09-Feb-2021	09-Feb-2021	09-Feb-2021
TPH CWG GC (S)	09-Feb-2021	10-Feb-2021	09-Feb-2021
VOC MS (S)	09-Feb-2021	08-Feb-2021	09-Feb-2021

Appendix General

1. Results are expressed on a dry weight basis (dried at 35ºC) for all soil analyses except for the following: NRA and CEN Leach tests, flash point LOI, pH, ammonium as NH4 by the BRE method, VOC TICs and SVOC TICs.

2. If sufficient sample is received a sub sample will be retained free of charge for 30 days after analysis is completed (e-mailed) for all sample types unless the sample is destroyed on testing. The prepared soil sub sample that is analysed for asbestos will be retained for a period of 6 months after the analysis date. All bulk samples will be retained for a period of 6 months after the analysis date. All samples received and not scheduled will be disposed of one month after the date of receipt unless we are instructed to the contrary. Once the initial period has expired, a storage charge will be applied for each month or part thereof until the client cancels the request for sample storage. ALS reserve the right to charge for samples received and stored but not analysed.

3. With respect to turnaround, we will always endeavour to meet client requirements wherever possible, but turnaround times cannot be absolutely guaranteed due to so many variables beyond our control.

4. We take responsibility for any test performed by sub-contractors (marked with an asterisk). We endeavour to use UKAS/MCERTS Accredited Laboratories, who either complete a quality questionnaire or are audited by ourselves. For some determinands there are no UKAS/MCERTS Accredited Laboratories, in this instance a laboratory with a known track record will be utilised.

5. If no separate volatile sample is supplied by the client, or if a headspace or sediment is present in the volatile sample, the integrity of the data may be compromised. This will be flagged up as an invalid VOC on the test schedule and the result marked as deviating on the test certificate.

6. NDP - No determination possible due to insufficient/unsuitable sample.

7. Results relate only to the items tested.

8. LoDs (Limit of Detection) for wet tests reported on a dry weight basis are not corrected for moisture content.

9. **Surrogate recoveries** - Surrogates are added to your sample to monitor recovery of the test requested. A % recovery is reported, results are not corrected for the recovery measured. Typical recoveries for organics tests are 70-130%. Recoveries in soils are affected by organic rich or clay rich matrices. Waters can be affected by remediation fluids or high amounts of sediment. Test results are only ever reported if all of the associated quality checks pass; it is assumed that all recoveries outside of the values above are due to matrix affect.

10. Stones/debris are not routinely removed. We always endeavour to take a representative sub sample from the received sample.

11. In certain circumstances the method detection limit may be elevated due to the sample being outside the calibration range. Other factors that may contribute to this include possible interferences. In both cases the sample would be diluted which would cause the method detection limit to be raised.

12. Mercury results quoted on soils will not include volatile mercury as the analysis is performed on a dried and crushed sample.

13. For leachate preparations other than Zero Headspace Extraction (ZHE) volatile loss may occur.

14. For the BSEN 12457-3 two batch process to allow the cumulative release to be calculated, the volume of the leachate produced is measured and filtered for all tests. We therefore cannot carry out any unfiltered analysis. The tests affected include volatiles GCFID/GCMS and all subcontracted analysis.

15. Analysis and identification of specific compounds using GCFID is by retention time only, and we routinely calibrate and quantify for benzene, toluene, ethylbenzenes and xylenes (BTEX). For total volatiles in the C5-C12 range, the total area of the chromatogram is integrated and expressed as ug/kg or ug/l. Although this analysis is commonly used for the quantification of gasoline range organics (GRO), the system will also detect other compounds such as chlorinated solvents, and this may lead to a falsely high result with respect to hydrocarbons only. It is not possible to specifically identify these non-hydrocarbons, as standards are not routinely run for any other compounds, and for more definitive identification, volatiles by GCMS should be utilised.

16. We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample. Other coarse granular material such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

17. **Tentatively Identified Compounds (TICs)** are non-target peaks in VOC and SVOC analysis. All non-target peaks detected with a concentration above the LoD are subjected to a mass spectral library search. Non-target peaks with a library search confidence of >75% are reported based on the best mass spectral library match. When a non-target peak with a library search confidence of <75% is detected it is reported as “mixed hydrocarbons”. Non-target compounds identified from the scan data are semi-quantified relative to one of the deuterated internal standards, under the same chromatographic conditions as the target compounds. This result is reported as a semi-quantitative value and reported as Tentatively Identified Compounds (TICs). TICs are outside the scope of UKAS accreditation and are not moisture corrected.

18. **Sample Deviations**

If a sample is classed as deviated then the associated results may be compromised.

1	**Container with Headspace provided for volatiles analysis**
2	**Incorrect container received**
3	**Deviation from method**
4	**Matrix interference**
♦	**Sample holding time exceeded in laboratory**
@	**Sample holding time exceeded due to late arrival of instructions or samples**
§	**Sampled on date not provided**

19. **Asbestos**

When requested, the individual sub sample scheduled will be analysed in house for the presence of asbestos fibres and asbestos containing material by our documented in house method TM048 based on HSG 248 (2005), which is accredited to ISO17025. If a specific asbestos fibre type is not found this will be reported as “Not detected”. If no asbestos fibre types are found all will be reported as “Not detected” and the sub sample analysed deemed to be clear of asbestos. If an asbestos fibre type is found it will be reported as detected (for each fibre type found). Testing can be carried out on asbestos positive samples, but, due to Health and Safety considerations, may be replaced by alternative tests or reported as No Determination Possible (NDP). The quantity of asbestos present is not determined unless specifically requested.

Identification of Asbestos in Bulk Materials & Soils

The results for identification of asbestos in bulk materials are obtained from supplied bulk materials which have been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

The results for identification of asbestos in soils are obtained from a homogenised sub sample which has been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

Asbestos Type	Common Name
Chrysotile	White Asbestos
Amosite	Brown Asbestos
Crocidolite	Blue Asbestos
Fibrous Actinolite	-
Fibrous Anthophyllite	-
Fibrous Tremolite	-

Visual Estimation Of Fibre Content

Estimation of fibre content is not permitted as part of our UKAS accredited test other than: - Trace - Where only one or two asbestos fibres were identified.

Respirable Fibres

Respirable fibres are defined as fibres of <3 µm diameter, longer than 5 µm and with aspect ratios of at least 3:1 that can be inhaled into the lower regions of the lung and are generally acknowledged to be most important predictor of hazard and risk for cancers of the lung.
Standing Committee of Analysts, *The Quantification of Asbestos in Soil (2017).*

Further guidance on typical asbestos fibre content of manufactured products can be found in HSG 264.

The identification of asbestos containing materials and soils falls within our schedule of tests for which we hold UKAS accreditation, however opinions, interpretations and all other information contained in the report are outside the scope of UKAS accreditation.

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Hawarden
Deeside
CH5 3US
Tel: (01244) 528700
Fax: (01244) 528701
email: hawardencustomerservices@alsglobal.com
Website: www.alsenvironmental.co.uk

Rodgers Leask
Office 225
2430/2440
Aztec West
Almondsbury
Bristol
BS32 4QA

Attention: Elliot Thomas

CERTIFICATE OF ANALYSIS

Date of report Generation:	02 March 2021
Customer:	Rodgers Leask
Sample Delivery Group (SDG):	210213-65
Your Reference:	P18-669
Location:	Llanwern
Report No:	588856

This report has been revised and directly supersedes 588583 in its entirety.

We received 39 samples on Saturday February 13, 2021 and 39 of these samples were scheduled for analysis which was completed on Tuesday March 02, 2021. Accredited laboratory tests are defined within the report, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation.

Should this report require incorporation into client reports, it must be used in its entirety and not simply with the data sections alone.

Chemical testing (unless subcontracted) performed at ALS Life Sciences Ltd Hawarden (Method codes TM) or ALS Life Sciences Ltd Aberdeen (Method codes S).

All sample data is provided by the customer. The reported results relate to the sample supplied, and on the basis that this data is correct.
Incorrect sampling dates and/or sample information will affect the validity of results.
The customer is not permitted to reproduce this report except in full without the approval of the laboratory.

Approved By:

Sonia McWhan

Operations Manager

CERTIFICATE OF ANALYSIS

SDG:	210213-65	**Client Reference:**	P18-669	**Report Number:**	588856
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	588583

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
23722437	SPAN-1		0.20 - 0.20	11/02/2021
23722485	SPAN-2		0.20 - 0.20	11/02/2021
23722565	SPAN-3		0.20 - 0.20	11/02/2021
23722622	SPAN-4		0.20 - 0.20	11/02/2021
23722477	SPLF-1		0.20 - 0.20	12/02/2021
23722481	SPLF-2		0.20 - 0.20	12/02/2021
23722489	SPLF-3		0.20 - 0.20	12/02/2021
23722493	SPLF-4		0.20 - 0.20	12/02/2021
23722500	SPLF-5		0.20 - 0.20	12/02/2021
23722507	SPLF-6		0.20 - 0.20	12/02/2021
23722517	SPLF-7		0.20 - 0.20	12/02/2021
23722524	SPLF-8		0.20 - 0.20	12/02/2021
23722532	SPLF-9		0.20 - 0.20	12/02/2021
23722541	SPLF-10		0.20 - 0.20	12/02/2021
23722551	SPLF-11		0.20 - 0.20	12/02/2021
23722559	SPLF-12		0.20 - 0.20	12/02/2021
23722572	SPLF-13		0.20 - 0.20	12/02/2021
23722580	SPLF-14		0.20 - 0.20	12/02/2021
23722584	SPLF-15		0.20 - 0.20	12/02/2021
23722589	SPLF-16		0.20 - 0.20	12/02/2021
23722594	SPLF-17		0.20 - 0.20	12/02/2021
23722598	SPLF-18		0.20 - 0.20	12/02/2021
23722604	SPLF-19		0.20 - 0.20	12/02/2021
23722608	SPLF-20		0.20 - 0.20	12/02/2021
23722613	SPLF-21		0.20 - 0.20	12/02/2021
23722618	SPLF-22		0.20 - 0.20	12/02/2021
23722627	W127-1		0.20 - 0.20	11/02/2021
23722631	W127-2		0.20 - 0.20	11/02/2021
23722635	W127-3		0.20 - 0.20	11/02/2021
23722639	W127-4		0.20 - 0.20	11/02/2021
23722644	W127-5		0.20 - 0.20	11/02/2021
23722441	W127-6		0.20 - 0.20	11/02/2021
23722445	W210-1		0.20 - 0.20	11/02/2021
23722449	W210-2		0.20 - 0.20	11/02/2021
23722454	W210-3		0.20 - 0.20	11/02/2021
23722458	W211-1		0.20 - 0.20	11/02/2021
23722462	W211-2		0.20 - 0.20	11/02/2021
23722466	W211-3		0.20 - 0.20	11/02/2021
23722473	W211-4		0.20 - 0.20	11/02/2021

Only received samples which have had analysis scheduled will be shown on the following pages.

Validated

CERTIFICATE OF ANALYSIS

SDG:	210213-65	**Client Reference:**	P18-669	**Report Number:**	588856
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	588583

Results Legend

X Test

N No Determination Possible

Sample Types -

S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

Lab Sample No(s)			23722437		23722485		23722565		23722622		23722477		23722481		23722489		23722493		
Customer Sample Reference			SPAN-1		SPAN-2		SPAN-3		SPAN-4		SPLF-1		SPLF-2		SPLF-3		SPLF-4		
AGS Reference																			
Depth (m)			0.20 - 0.20		0.20 - 0.20		0.20 - 0.20		0.20 - 0.20		0.20 - 0.20		0.20 - 0.20		0.20 - 0.20		0.20 - 0.20		
Container			1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)
Sample Type			S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
Ammonium Soil by Titration	All	NDPs: 0 Tests: 39		X		X			X		X		X		X		X		X
Asbestos ID in Solid Samples	All	NDPs: 0 Tests: 20	X					X						X				X	
Asbestos Quantification - Full	All	NDPs: 0 Tests: 3											X						
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 39		X		X			X		X		X		X		X		X
EPH CWG GC (S)	All	NDPs: 0 Tests: 39		X		X			X		X		X		X		X		X
GRO by GC-FID (S)	All	NDPs: 0 Tests: 39			X		X			X		X		X		X		X	
Metals in solid samples by OES	All	NDPs: 0 Tests: 39		X		X			X		X		X		X		X		X
PAH by GCMS	All	NDPs: 0 Tests: 39		X		X			X		X		X		X		X		X
pH	All	NDPs: 0 Tests: 39		X		X			X		X		X		X		X		X
Phenols by HPLC (S)	All	NDPs: 0 Tests: 39		X		X			X		X		X		X		X		X
Sample description	All	NDPs: 0 Tests: 39		X		X			X		X		X		X		X		X
Total Organic Carbon	All	NDPs: 0 Tests: 39		X		X			X		X		X		X		X		X
TPH CWG GC (S)	All	NDPs: 0 Tests: 39		X		X			X		X		X		X		X		X
VOC MS (S)	All	NDPs: 0 Tests: 39			X		X			X		X		X		X		X	

23722559	SPLF-12		0.20 - 0.20	60g VOC (ALE215)	S						X								X
				250g Amber Jar (ALE210)	S	X			X	X		X	X	X	X	X	X	X	
				1kg TUB with Handle (ALE260)	S		X												
23722551	SPLF-11		0.20 - 0.20	60g VOC (ALE215)	S						X								X
				250g Amber Jar (ALE210)	S	X			X	X		X	X	X	X	X	X	X	
23722541	SPLF-10		0.20 - 0.20	60g VOC (ALE215)	S						X								X
				250g Amber Jar (ALE210)	S	X			X	X		X	X	X	X	X	X	X	
				1kg TUB with Handle (ALE260)	S		X												
23722532	SPLF-9		0.20 - 0.20	60g VOC (ALE215)	S						X								X
				250g Amber Jar (ALE210)	S	X			X	X		X	X	X	X	X	X	X	
23722524	SPLF-8		0.20 - 0.20	60g VOC (ALE215)	S						X								X
				250g Amber Jar (ALE210)	S	X			X	X		X	X	X	X	X	X	X	
				1kg TUB with Handle (ALE260)	S		X												
23722517	SPLF-7		0.20 - 0.20	60g VOC (ALE215)	S						X								X
				250g Amber Jar (ALE210)	S	X			X	X		X	X	X	X	X	X	X	
23722507	SPLF-6		0.20 - 0.20	60g VOC (ALE215)	S						X								X
				250g Amber Jar (ALE210)	S	X			X	X		X	X	X	X	X	X	X	
				1kg TUB with Handle (ALE260)	S		X												
23722500	SPLF-5		0.20 - 0.20	60g VOC (ALE215)	S						X								X
				250g Amber Jar (ALE210)	S	X			X	X		X	X	X	X	X	X	X	
23722493	SPLF-4		0.20 - 0.20	60g VOC (ALE215)	S						X								X

Validated

CERTIFICATE OF ANALYSIS

SDG:	210213-65	**Client Reference:**	P18-669	**Report Number:**	588856
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	588583

Results Legend

X Test

N No Determination Possible

Sample Types -

S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

Lab Sample No(s)			23722572		23722580		23722584		23722589		23722594		23722598		23722604		23722608			
Customer Sample Reference			SPLF-13		SPLF-14		SPLF-15		SPLF-16		SPLF-17		SPLF-18		SPLF-19		SPLF-20			
AGS Reference																				
Depth (m)			0.20 - 0.20		0.20 - 0.20		0.20 - 0.20		0.20 - 0.20		0.20 - 0.20		0.20 - 0.20		0.20 - 0.20		0.20 - 0.20			
Container			250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)
Sample Type			S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
Ammonium Soil by Titration	All	NDPs: 0 Tests: 39	X			X		X			X		X			X		X			X
Asbestos ID in Solid Samples	All	NDPs: 0 Tests: 20			X					X					X					X	
Asbestos Quantification - Full	All	NDPs: 0 Tests: 3																			
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 39	X			X		X			X		X			X		X			X
EPH CWG GC (S)	All	NDPs: 0 Tests: 39	X			X		X			X		X			X		X			X
GRO by GC-FID (S)	All	NDPs: 0 Tests: 39		X			X		X			X		X			X		X		
Metals in solid samples by OES	All	NDPs: 0 Tests: 39	X			X		X			X		X			X		X			X
PAH by GCMS	All	NDPs: 0 Tests: 39	X			X		X			X		X			X		X			X
pH	All	NDPs: 0 Tests: 39	X			X		X			X		X			X		X			X
Phenols by HPLC (S)	All	NDPs: 0 Tests: 39	X			X		X			X		X			X		X			X
Sample description	All	NDPs: 0 Tests: 39	X			X		X			X		X			X		X			X
Total Organic Carbon	All	NDPs: 0 Tests: 39	X			X		X			X		X			X		X			X
TPH CWG GC (S)	All	NDPs: 0 Tests: 39	X			X		X			X		X			X		X			X
VOC MS (S)	All	NDPs: 0 Tests: 39		X			X		X			X		X			X		X		

23722441	W127-6		0.20 - 0.20	60g VOC (ALE215)	S		
				250g Amber Jar (ALE210)	S	X	
23722644	W127-5		0.20 - 0.20	60g VOC (ALE215)	S		X
				250g Amber Jar (ALE210)	S	X	
				1kg TUB with Handle (ALE260)	S		X
23722639	W127-4		0.20 - 0.20	60g VOC (ALE215)	S		X
				250g Amber Jar (ALE210)	S	X	
23722635	W127-3		0.20 - 0.20	60g VOC (ALE215)	S		X
				250g Amber Jar (ALE210)	S	X	
				1kg TUB with Handle (ALE260)	S		X
23722631	W127-2		0.20 - 0.20	60g VOC (ALE215)	S		X
				250g Amber Jar (ALE210)	S	X	
23722627	W127-1		0.20 - 0.20	60g VOC (ALE215)	S		X
				250g Amber Jar (ALE210)	S	X	
				1kg TUB with Handle (ALE260)	S		X
23722618	SPLF-22		0.20 - 0.20	60g VOC (ALE215)	S		X
				250g Amber Jar (ALE210)	S	X	
				1kg TUB with Handle (ALE260)	S		X
23722613	SPLF-21		0.20 - 0.20	60g VOC (ALE215)	S		X
				250g Amber Jar (ALE210)	S	X	
23722608	SPLF-20		0.20 - 0.20	60g VOC (ALE215)	S		X

Validated

CERTIFICATE OF ANALYSIS

SDG:	210213-65	**Client Reference:**	P18-669	**Report Number:**	588856
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	588583

Results Legend

X Test

N No Determination Possible

Sample Types -

S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

Lab Sample No(s)			23722445		23722449		23722454		23722458		23722462			23722466			23722473		
Customer Sample Reference			W210-1		W210-2		W210-3		W211-1		W211-2			W211-3			W211-4		
AGS Reference																			
Depth (m)			0.20 - 0.20		0.20 - 0.20		0.20 - 0.20		0.20 - 0.20		0.20 - 0.20			0.20 - 0.20			0.20 - 0.20		
Container			1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)	60g VOC (ALE215)
Sample Type			S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
Ammonium Soil by Titration	All	NDPs: 0 Tests: 39		X		X			X		X			X		X			X	
Asbestos ID in Solid Samples	All	NDPs: 0 Tests: 20	X					X					X					X		
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 39		X		X			X		X			X		X			X	
EPH CWG GC (S)	All	NDPs: 0 Tests: 39		X		X			X		X			X		X			X	
GRO by GC-FID (S)	All	NDPs: 0 Tests: 39			X		X			X		X			X		X			X
Metals in solid samples by OES	All	NDPs: 0 Tests: 39		X		X			X		X			X		X			X	
PAH by GCMS	All	NDPs: 0 Tests: 39		X		X			X		X			X		X			X	
pH	All	NDPs: 0 Tests: 39		X		X			X		X			X		X			X	
Phenols by HPLC (S)	All	NDPs: 0 Tests: 39		X		X			X		X			X		X			X	
Sample description	All	NDPs: 0 Tests: 39		X		X			X		X			X		X			X	
Total Organic Carbon	All	NDPs: 0 Tests: 39		X		X			X		X			X		X			X	
TPH CWG GC (S)	All	NDPs: 0 Tests: 39		X		X			X		X			X		X			X	
VOC MS (S)	All	NDPs: 0 Tests: 39			X		X			X		X			X		X			X

CERTIFICATE OF ANALYSIS

SDG:	210213-65	**Client Reference:**	P18-669	**Report Number:**	588856
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	588583

Sample Descriptions

Grain Sizes

very fine	<0.063mm	fine	0.063mm - 0.1mm	medium	0.1mm - 2mm	coarse	2mm - 10mm	very coarse	>10mm

Lab Sample No(s)	Customer Sample Ref.	Depth (m)	Colour	Description	Inclusions	Inclusions 2
23722437	SPAN-1	0.20 - 0.20	Dark Brown	Loamy Sand	Stones	None
23722485	SPAN-2	0.20 - 0.20	Dark Brown	Sandy Loam	Stones	None
23722565	SPAN-3	0.20 - 0.20	Dark Brown	Sandy Loam	Stones	None
23722622	SPAN-4	0.20 - 0.20	Dark Brown	Loamy Sand	Stones	None
23722477	SPLF-1	0.20 - 0.20	Light Brown	Sandy Clay Loam	Stones	None
23722481	SPLF-2	0.20 - 0.20	Dark Brown	Sandy Loam	Stones	Brick
23722489	SPLF-3	0.20 - 0.20	Dark Brown	Sandy Loam	Stones	Vegetation
23722493	SPLF-4	0.20 - 0.20	Light Brown	Sandy Clay Loam	Stones	None
23722500	SPLF-5	0.20 - 0.20	Dark Brown	Sandy Clay Loam	Stones	Vegetation
23722507	SPLF-6	0.20 - 0.20	Light Brown	Sandy Clay Loam	Stones	None
23722517	SPLF-7	0.20 - 0.20	Light Brown	Sandy Clay Loam	Stones	None
23722524	SPLF-8	0.20 - 0.20	Dark Brown	Sandy Clay Loam	Stones	Vegetation
23722532	SPLF-9	0.20 - 0.20	Dark Brown	Sandy Clay Loam	Stones	None
23722541	SPLF-10	0.20 - 0.20	Light Brown	Clay Loam	Stones	Vegetation
23722551	SPLF-11	0.20 - 0.20	Light Brown	Sandy Loam	Stones	Vegetation
23722559	SPLF-12	0.20 - 0.20	Light Brown	Silty Clay Loam	Stones	None
23722572	SPLF-13	0.20 - 0.20	Light Brown	Sandy Clay Loam	Stones	Vegetation
23722580	SPLF-14	0.20 - 0.20	Light Brown	Sandy Clay Loam	Stones	None
23722584	SPLF-15	0.20 - 0.20	Dark Brown	Sandy Clay Loam	Stones	None
23722589	SPLF-16	0.20 - 0.20	Light Brown	Sandy Loam	Stones	Vegetation
23722594	SPLF-17	0.20 - 0.20	Light Brown	Sandy Clay Loam	Stones	Brick
23722598	SPLF-18	0.20 - 0.20	Dark Brown	Sandy Clay Loam	Stones	Vegetation
23722604	SPLF-19	0.20 - 0.20	Dark Brown	Sandy Clay Loam	Stones	None
23722608	SPLF-20	0.20 - 0.20	Light Brown	Sandy Loam	Stones	Vegetation
23722613	SPLF-21	0.20 - 0.20	Light Brown	Clay Loam	Stones	None
23722618	SPLF-22	0.20 - 0.20	Light Brown	Sandy Clay Loam	Stones	Vegetation
23722627	W127-1	0.20 - 0.20	Dark Brown	Sandy Loam	Stones	None
23722631	W127-2	0.20 - 0.20	Dark Brown	Sandy Loam	Stones	None
23722635	W127-3	0.20 - 0.20	Dark Brown	Sandy Loam	Stones	Vegetation
23722639	W127-4	0.20 - 0.20	Dark Brown	Sandy Loam	Stones	None
23722644	W127-5	0.20 - 0.20	Dark Brown	Sandy Loam	Stones	Vegetation
23722441	W127-6	0.20 - 0.20	Dark Brown	Sandy Loam	Stones	Vegetation
23722445	W210-1	0.20 - 0.20	Light Brown	Sandy Loam	Stones	None
23722449	W210-2	0.20 - 0.20	Light Brown	Sandy Loam	Stones	None
23722454	W210-3	0.20 - 0.20	Light Brown	Sandy Loam	Stones	None
23722458	W211-1	0.20 - 0.20	Dark Brown	Loamy Sand	Stones	Vegetation
23722462	W211-2	0.20 - 0.20	Light Brown	Sandy Loam	Stones	Brick
23722466	W211-3	0.20 - 0.20	Dark Brown	Loamy Sand	Stones	None
23722473	W211-4	0.20 - 0.20	Light Brown	Sandy Loam	Stones	Brick

These descriptions are only intended to act as a cross check if sample identities are questioned, and to provide a log of sample matrices with respect to MCERTS validation. They are not intended as full geological descriptions.

We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally ocurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample.

Other coarse granular materials such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

Validated

CERTIFICATE OF ANALYSIS

SDG:	210213-65	**Client Reference:**	P18-669	**Report Number:**	588856
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	588583

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	SPAN-1	SPAN-2	SPAN-3	SPAN-4	SPLF-1	SPLF-2
			Depth (m)	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	11/02/2021	11/02/2021	11/02/2021	11/02/2021	12/02/2021	12/02/2021
			Sample Time	.	.	.	.	.	.
			Date Received	13/02/2021	13/02/2021	13/02/2021	13/02/2021	13/02/2021	13/02/2021
			SDG Ref	210213-65	210213-65	210213-65	210213-65	210213-65	210213-65
			Lab Sample No.(s)	23722437	23722485	23722565	23722622	23722477	23722481
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		8.1	8.9	8.1	8.5	25	15
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	<12 M	<12 M	<12 M	<12 M	<12 M
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M
Soil Organic Matter (SOM)	<0.35 %	TM132		3.07 #	2.64 #	2.29 #	2.98 #	9.79 #	5.45 #
pH	1 pH Units	TM133		11.4 M	11.5 M	11.4 M	11.6 M	8.45 M	9.37 M
Cyanide, Total	<1 mg/kg	TM153		<1 M	<1 M	<1 M	<1 M	<1 M	<1 M
Arsenic	<0.6 mg/kg	TM181		16 M	14 M	14.1 M	13.2 M	9.78 M	23.1 M
Cadmium	<0.02 mg/kg	TM181		1.38 M	2.62 M	1.14 M	2.75 M	0.944 M	1.17 M
Chromium	<0.9 mg/kg	TM181		117 M	141 M	121 M	189 M	59.4 M	126 M
Copper	<1.4 mg/kg	TM181		18.3 M	37.1 M	23.7 M	47.6 M	18.1 M	28.9 M
Iron	<1000 mg/kg	TM181		227000 #	248000 #	205000 #	267000 #	56900 #	104000 #
Lead	<0.7 mg/kg	TM181		92.4 M	110 M	52.9 M	122 M	76.3 M	60.1 M
Manganese	<0.13 mg/kg	TM181		10900 M	13600 M	11200 M	15100 M	3060 M	8790 M
Mercury	<0.1 mg/kg	TM181		0.141 M	<0.1 M	<0.1 M	<0.1 M	0.35 M	<0.1 M
Nickel	<0.2 mg/kg	TM181		15.5 M	32 M	16.6 M	29.6 M	24.7 M	21.5 M
Selenium	<1 mg/kg	TM181		<1 #	<1 #	<1 #	<1 #	<1 #	2.08 #
Vanadium	<0.2 mg/kg	TM181		309 #	234 #	210 #	310 #	105 #	124 #
Zinc	<1.9 mg/kg	TM181		424 M	456 M	219 M	483 M	330 M	370 M
Asbestos Quantification - Gravimetric - %	<0.001 %	TM304							<0.001 #
Asbestos Quantification - PCOM Evaluation - %	<0.001 %	TM304							<0.001 #
Additional Asbestos Components (Using TM048)		TM304							None #
Analysts Comments		TM304							0
Asbestos Quantification - Total - %	<0.001 %	TM304							<0.001 #

Validated

CERTIFICATE OF ANALYSIS

SDG:	210213-65	**Client Reference:**	P18-669	**Report Number:**	588856
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	588583

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	SPLF-3	SPLF-4	SPLF-5	SPLF-6	SPLF-7	SPLF-8
			Depth (m)	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	12/02/2021	12/02/2021	12/02/2021	12/02/2021	12/02/2021	12/02/2021
			Sample Time	.	.	.	.	.	.
			Date Received	13/02/2021	13/02/2021	13/02/2021	13/02/2021	13/02/2021	13/02/2021
			SDG Ref	210213-65	210213-65	210213-65	210213-65	210213-65	210213-65
			Lab Sample No.(s)	23722489	23722493	23722500	23722507	23722517	23722524
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		12	27	16	13	20	21
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	<12 M	<12 M	<12 M	<12 M	<12 M
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0 M	<0.01 M	<0.01 M	<0.01 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M
Soil Organic Matter (SOM)	<0.35 %	TM132		6.78 #	4.26 #	5.33 #	2.62 #	2.5 #	3.65 #
pH	1 pH Units	TM133		9.76 M	10.5 M	10.6 M	10.4 M	8.65 M	8.93 M
Cyanide, Total	<1 mg/kg	TM153		<1 M	<1 M	<1 M	<1 M	<1 M	<1 M
Arsenic	<0.6 mg/kg	TM181		13 M	10.6 M	17.8 M	12.4 M	12.3 M	19.5 M
Cadmium	<0.02 mg/kg	TM181		1.26 M	<0.2 M	1.78 M	<0.2 M	1.25 M	<0.2 M
Chromium	<0.9 mg/kg	TM181		141 M	47.7 M	82.7 M	35.7 M	15.9 M	40.3 M
Copper	<1.4 mg/kg	TM181		26.9 M	23.7 M	28.1 M	28.8 M	53.7 M	41.8 M
Iron	<1000 mg/kg	TM181		102000 #	149000 #	166000 #	188000 #	137000 #	137000 #
Lead	<0.7 mg/kg	TM181		65 M	62.8 M	46.3 M	40.2 M	36.1 M	77.7 M
Manganese	<0.13 mg/kg	TM181		10200 M	4980 M	10300 M	6500 M	2830 M	6420 M
Mercury	<0.1 mg/kg	TM181		<0.1 M	<1 M	<0.1 M	<1 M	<0.1 M	<1 M
Nickel	<0.2 mg/kg	TM181		17.9 M	17.1 M	16.4 M	18.4 M	17.9 M	26.4 M
Selenium	<1 mg/kg	TM181		2.64 #	<10 #	<1 #	<10 #	<1 #	<10 #
Vanadium	<0.2 mg/kg	TM181		188 #	99.9 #	173 #	81.2 #	54.1 #	73.8 #
Zinc	<1.9 mg/kg	TM181		315 M	222 M	241 M	155 M	193 M	254 M

Validated

CERTIFICATE OF ANALYSIS

SDG:	210213-65	**Client Reference:**	P18-669	**Report Number:**	588856
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	588583

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	SPLF-9	SPLF-10	SPLF-11	SPLF-12	SPLF-13	SPLF-14
			Depth (m)	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	12/02/2021	12/02/2021	12/02/2021	12/02/2021	12/02/2021	12/02/2021
			Sample Time	.	.	.	.	.	.
			Date Received	13/02/2021	13/02/2021	13/02/2021	13/02/2021	13/02/2021	13/02/2021
			SDG Ref	210213-65	210213-65	210213-65	210213-65	210213-65	210213-65
			Lab Sample No.(s)	23722532	23722541	23722551	23722559	23722572	23722580
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		18	25	14	26	16	13
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	<12 M	<12 M	<12 M	<12 M	<12 M
Phenol	<0.01 mg/kg	TM062 (S)		0.0123 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M	<0.015 M	0.0268 M	<0.015 M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M
Soil Organic Matter (SOM)	<0.35 %	TM132		5.47 #	7.62 #	3.83 #	3.14 #	4.98 #	7.21 #
pH	1 pH Units	TM133		9.47 M	8.72 M	10.7 M	8.12 M	9.8 M	10.1 M
Cyanide, Total	<1 mg/kg	TM153		<1 M	<1 M	<1 M	<1 M	<1 M	<1 M
Arsenic	<0.6 mg/kg	TM181		13.2 M	14.2 M	19 M	10.7 M	13.9 M	10.5 M
Cadmium	<0.02 mg/kg	TM181		1.81 M	0.283 M	1.02 M	<0.2 M	0.919 M	0.864 M
Chromium	<0.9 mg/kg	TM181		57.1 M	60.4 M	130 M	46.7 M	97.3 M	96.2 M
Copper	<1.4 mg/kg	TM181		40.4 M	26.1 M	23.9 M	20.8 M	24.1 M	23.4 M
Iron	<1000 mg/kg	TM181		177000 #	37300 #	92000 #	32800 #	64800 #	81500 #
Lead	<0.7 mg/kg	TM181		54.8 M	83.3 M	63.7 M	39.7 M	63.8 M	57.3 M
Manganese	<0.13 mg/kg	TM181		4020 M	2880 M	10600 M	1130 M	6680 M	8030 M
Mercury	<0.1 mg/kg	TM181		0.122 M	<1 M	<0.1 M	<1 M	<0.1 M	<0.1 M
Nickel	<0.2 mg/kg	TM181		22.4 M	30.6 M	18.9 M	29.8 M	19.9 M	13.1 M
Selenium	<1 mg/kg	TM181		<1 #	<10 #	3.39 #	<10 #	1.92 #	2.14 #
Vanadium	<0.2 mg/kg	TM181		76.5 #	89 #	268 #	56.4 #	135 #	163 #
Zinc	<1.9 mg/kg	TM181		198 M	204 M	231 M	135 M	270 M	243 M

Validated

CERTIFICATE OF ANALYSIS

SDG:	210213-65	**Client Reference:**	P18-669	**Report Number:**	588856
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	588583

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	SPLF-15	SPLF-16	SPLF-17	SPLF-18	SPLF-19	SPLF-20
			Depth (m)	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	12/02/2021	12/02/2021	12/02/2021	12/02/2021	12/02/2021	12/02/2021
			Sample Time	.	.	.	.	.	.
			Date Received	13/02/2021	13/02/2021	13/02/2021	13/02/2021	13/02/2021	13/02/2021
			SDG Ref	210213-65	210213-65	210213-65	210213-65	210213-65	210213-65
			Lab Sample No.(s)	23722584	23722589	23722594	23722598	23722604	23722608
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		14	14	11	20	20	15
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	<12 M	<12 M	<12 M	<12 M	<12 M
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M
Soil Organic Matter (SOM)	<0.35 %	TM132		6.74 #	6.5 #	1.37 #	2.98 #	3.15 #	2.78 #
pH	1 pH Units	TM133		10.8 M	10.1 M	9.86 M	8.82 M	9.11 M	9.54 M
Cyanide, Total	<1 mg/kg	TM153		<1 M	<1 M	<1 M	<1 M	<1 M	<1 M
Arsenic	<0.6 mg/kg	TM181		12.8 M	13.9 M	11 M	12.7 M	16.8 M	13 M
Cadmium	<0.02 mg/kg	TM181		1.4 M	1.11 M	0.805 M	<0.2 M	2 M	0.898 M
Chromium	<0.9 mg/kg	TM181		83 M	29.6 M	13.9 M	30.4 M	12 M	35 M
Copper	<1.4 mg/kg	TM181		26.2 M	32.3 M	60.1 M	32 M	44.3 M	25.7 M
Iron	<1000 mg/kg	TM181		120000 #	200000 #	220000 #	137000 #	214000 #	198000 #
Lead	<0.7 mg/kg	TM181		62.3 M	41.6 M	12.3 M	36.9 M	41.5 M	28.8 M
Manganese	<0.13 mg/kg	TM181		8390 M	4790 M	5020 M	2410 M	3720 M	6540 M
Mercury	<0.1 mg/kg	TM181		<0.1 M	0.168 M	0.1 M	<1 M	0.431 M	<0.1 M
Nickel	<0.2 mg/kg	TM181		15.3 M	12.4 M	11.5 M	22.4 M	18.5 M	10.1 M
Selenium	<1 mg/kg	TM181		1.58 #	<1 #	<1 #	<10 #	<1 #	<1 #
Vanadium	<0.2 mg/kg	TM181		130 #	82.3 #	88.5 #	61.8 #	69.4 #	81 #
Zinc	<1.9 mg/kg	TM181		303 M	215 M	118 M	123 M	184 M	142 M

Validated

CERTIFICATE OF ANALYSIS

SDG:	210213-65	**Client Reference:**	P18-669	**Report Number:**	588856
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	588583

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	SPLF-21	SPLF-22	W127-1	W127-2	W127-3	W127-4
			Depth (m)	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	12/02/2021	12/02/2021	11/02/2021	11/02/2021	11/02/2021	11/02/2021
			Sample Time	.	.	.	.	.	.
			Date Received	13/02/2021	13/02/2021	13/02/2021	13/02/2021	13/02/2021	13/02/2021
			SDG Ref	210213-65	210213-65	210213-65	210213-65	210213-65	210213-65
			Lab Sample No.(s)	23722613	23722618	23722627	23722631	23722635	23722639
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		27	16	21	25	21	23
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	<12 M	<12 M	<12 M	<12 M	<12 M
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M
Soil Organic Matter (SOM)	<0.35 %	TM132		4.41 #	2.95 #	35 #	36.7 #	44.1 #	32.9 #
pH	1 pH Units	TM133		8.47 M	10.5 M	8.21 M	8.25 M	8.18 M	8.31 M
Cyanide, Total	<1 mg/kg	TM153		<1 M	<1 M	13 M	20.5 M	17.9 M	19.4 M
Arsenic	<0.6 mg/kg	TM181		16.6 M	15.3 M	41.7 M	43.3 M	44.9 M	34.4 M
Cadmium	<0.02 mg/kg	TM181		0.557 M	<0.2 M	34.3 M	38.2 M	36.8 M	31.9 M
Chromium	<0.9 mg/kg	TM181		51.2 M	257 M	<9 M	53.7 M	<9 M	49.6 M
Copper	<1.4 mg/kg	TM181		22.5 M	25.3 M	65.3 M	82 M	71 M	73.1 M
Iron	<1000 mg/kg	TM181		49400 #	109000 #	298000 #	367000 #	325000 #	346000 #
Lead	<0.7 mg/kg	TM181		43.8 M	64.7 M	4970 M	7150 M	5320 M	4980 M
Manganese	<0.13 mg/kg	TM181		2030 M	13500 M	7510 M	9100 M	8550 M	9110 M
Mercury	<0.1 mg/kg	TM181		<0.1 M	<1 M	1.44 M	1.37 M	1.83 M	1.06 M
Nickel	<0.2 mg/kg	TM181		40.2 M	24.8 M	59.7 M	49.9 M	64.6 M	43.2 M
Selenium	<1 mg/kg	TM181		<1 #	<10 #	<10 #	<1 #	<10 #	<1 #
Vanadium	<0.2 mg/kg	TM181		81.4 #	485 #	176 #	176 #	216 #	172 #
Zinc	<1.9 mg/kg	TM181		169 M	232 M	14700 M	21600 M	16000 M	16900 M
Asbestos Quantification - Gravimetric - %	<0.001 %	TM304			<0.001 #			<0.001 #	
Asbestos Quantification - PCOM Evaluation - %	<0.001 %	TM304			<0.001 #			<0.001 #	
Additional Asbestos Components (Using TM048)		TM304			None #			None #	
Analysts Comments		TM304			N/A			0	
Asbestos Quantification - Total - %	<0.001 %	TM304			<0.001 #			<0.001 #	

Validated

CERTIFICATE OF ANALYSIS

SDG:	210213-65	**Client Reference:**	P18-669	**Report Number:**	588856
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	588583

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	W127-5	W127-6	W210-1	W210-2	W210-3	W211-1
			Depth (m)	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	11/02/2021	11/02/2021	11/02/2021	11/02/2021	11/02/2021	11/02/2021
			Sample Time	.	.	.	.	.	.
			Date Received	13/02/2021	13/02/2021	13/02/2021	13/02/2021	13/02/2021	13/02/2021
			SDG Ref	210213-65	210213-65	210213-65	210213-65	210213-65	210213-65
			Lab Sample No.(s)	23722644	23722441	23722445	23722449	23722454	23722458
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		15	16	9	12	6.4	9.8
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	<12 M	<12 M	<12 M	<12 M	<12 M
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M
Soil Organic Matter (SOM)	<0.35 %	TM132		13.3 #	13.6 #	3.41 #	6.74 #	4.67 #	1.28 #
pH	1 pH Units	TM133		8.53 M	8.82 M	9.23 M	9.3 M	9.36 M	10.3 M
Cyanide, Total	<1 mg/kg	TM153		5.73 M	10.4 M	<1 M	<1 M	<1 M	<1 M
Arsenic	<0.6 mg/kg	TM181		15.4 M	19 M	11.4 M	13 M	11.1 M	15.5 M
Cadmium	<0.02 mg/kg	TM181		9.49 M	12.3 M	<0.2 M	1.39 M	1.08 M	1.55 M
Chromium	<0.9 mg/kg	TM181		82 M	32.9 M	101 M	161 M	192 M	26.8 M
Copper	<1.4 mg/kg	TM181		28.5 M	35.5 M	26.9 M	32.3 M	22.3 M	14.5 M
Iron	<1000 mg/kg	TM181		232000 #	200000 #	124000 #	128000 #	131000 #	181000 #
Lead	<0.7 mg/kg	TM181		1580 M	1800 M	68.7 M	62.2 M	50.9 M	3.98 M
Manganese	<0.13 mg/kg	TM181		10800 M	4910 M	9110 M	12500 M	17500 M	13100 M
Mercury	<0.1 mg/kg	TM181		0.489 M	0.466 M	<1 M	<0.1 M	<0.1 M	<0.1 M
Nickel	<0.2 mg/kg	TM181		16 M	28.9 M	19.2 M	18.4 M	9.91 M	12.3 M
Selenium	<1 mg/kg	TM181		<1 #	<1 #	<10 #	2.78 #	4.78 #	1.47 #
Vanadium	<0.2 mg/kg	TM181		129 #	108 #	153 #	268 #	331 #	72.9 #
Zinc	<1.9 mg/kg	TM181		5140 M	6110 M	275 M	417 M	247 M	65.8 M

CERTIFICATE OF ANALYSIS

SDG:	210213-65	**Client Reference:**	P18-669	**Report Number:**	588856
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	588583

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	W211-2	W211-3	W211-4			
			Depth (m)	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20			
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)			
			Date Sampled	11/02/2021	11/02/2021	11/02/2021			
			Sample Time	.	.	.			
			Date Received	13/02/2021	13/02/2021	13/02/2021			
			SDG Ref	210213-65	210213-65	210213-65			
			Lab Sample No.(s)	23722462	23722466	23722473			
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		6.2	9.6	11			
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	<12 M	<12 M			
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M			
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M			
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M	<0.015 M			
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 M	<0.035 M			
Soil Organic Matter (SOM)	<0.35 %	TM132		9.95 #	1.69 #	2.55 #			
pH	1 pH Units	TM133		10.9 M	10.4 M	10.5 M			
Cyanide, Total	<1 mg/kg	TM153		<1 M	<1 M	<1 M			
Arsenic	<0.6 mg/kg	TM181		20.8 M	11.8 M	10.3 M			
Cadmium	<0.02 mg/kg	TM181		0.494 M	1.43 M	1.15 M			
Chromium	<0.9 mg/kg	TM181		51.2 M	58.1 M	24.6 M			
Copper	<1.4 mg/kg	TM181		22.1 M	11.4 M	14.7 M			
Iron	<1000 mg/kg	TM181		233000 #	229000 #	188000 #			
Lead	<0.7 mg/kg	TM181		9.69 M	<0.7 M	34.9 M			
Manganese	<0.13 mg/kg	TM181		5380 M	23400 M	5900 M			
Mercury	<0.1 mg/kg	TM181		0.578 M	<0.1 M	<0.1 M			
Nickel	<0.2 mg/kg	TM181		4.34 M	7.18 M	16.9 M			
Selenium	<1 mg/kg	TM181		<1 #	3.7 #	<1 #			
Vanadium	<0.2 mg/kg	TM181		165 #	120 #	96.9 #			
Zinc	<1.9 mg/kg	TM181		124 M	67.6 M	207 M			

Validated

CERTIFICATE OF ANALYSIS

SDG:	210213-65	**Client Reference:**	P18-669	**Report Number:**	588856
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	588583

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	SPAN-1	SPAN-2	SPAN-3	SPAN-4	SPLF-1	SPLF-2
			Depth (m)	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	11/02/2021	11/02/2021	11/02/2021	11/02/2021	12/02/2021	12/02/2021
			Sample Time	.	.	.	.	.	.
			Date Received	13/02/2021	13/02/2021	13/02/2021	13/02/2021	13/02/2021	13/02/2021
			SDG Ref	210213-65	210213-65	210213-65	210213-65	210213-65	210213-65
			Lab Sample No.(s)	23722437	23722485	23722565	23722622	23722477	23722481
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		98.2	97.7	97.5	95	92.3	97.4
Acenaphthene-d10 % recovery**	%	TM218		99	97.8	95.2	93.1	94.6	98.6
Phenanthrene-d10 % recovery**	%	TM218		103	102	97.5	97.1	99.3	102
Chrysene-d12 % recovery**	%	TM218		93.3	96.4	100	85.3	87.7	95.4
Perylene-d12 % recovery**	%	TM218		98.8	100	95	81.8	89.4	101
Naphthalene	<9 µg/kg	TM218		247 M	269 M	195 M	203 M	125 M	655 M
Acenaphthylene	<12 µg/kg	TM218		92.1 M	91.2 M	108 M	90.1 M	70.1 M	243 M
Acenaphthene	<8 µg/kg	TM218		35.8 M	25 M	52.9 M	22.6 M	<8 M	698 M
Fluorene	<10 µg/kg	TM218		49.8 M	44.3 M	48.9 M	33 M	50 M	1030 M
Phenanthrene	<15 µg/kg	TM218		544 M	643 M	569 M	504 M	429 M	9520 M
Anthracene	<16 µg/kg	TM218		149 M	164 M	158 M	147 M	91.6 M	2380 M
Fluoranthene	<17 µg/kg	TM218		1150 M	1280 M	1280 M	1110 M	869 M	11100 M
Pyrene	<15 µg/kg	TM218		925 M	995 M	1050 M	860 M	622 M	8200 M
Benz(a)anthracene	<14 µg/kg	TM218		486 M	562 M	597 M	562 M	339 M	4840 M
Chrysene	<10 µg/kg	TM218		515 M	514 M	530 M	638 M	277 M	4500 M
Benzo(b)fluoranthene	<15 µg/kg	TM218		804 M	987 M	955 M	847 M	487 M	5950 M
Benzo(k)fluoranthene	<14 µg/kg	TM218		207 M	289 M	306 M	280 M	116 M	1570 M
Benzo(a)pyrene	<15 µg/kg	TM218		423 M	521 M	568 M	442 M	262 M	4040 M
Indeno(1,2,3-cd)pyrene	<18 µg/kg	TM218		434 M	531 M	428 M	386 M	236 M	3200 M
Dibenzo(a,h)anthracene	<23 µg/kg	TM218		80 M	93.6 M	95.6 M	93.1 M	39.2 M	259 M
Benzo(g,h,i)perylene	<24 µg/kg	TM218		368 M	459 M	394 M	356 M	166 M	2550 M
PAH, Total Detected USEPA 16	<118 µg/kg	TM218		6510	7460	7330	6570	4180	60700

Validated

CERTIFICATE OF ANALYSIS

SDG:	210213-65	**Client Reference:**	P18-669	**Report Number:**	588856
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	588583

PAH by GCMS

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	SPLF-3	SPLF-4	SPLF-5	SPLF-6	SPLF-7	SPLF-8
			Depth (m)	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	12/02/2021	12/02/2021	12/02/2021	12/02/2021	12/02/2021	12/02/2021
			Sample Time	.	.	.	.	.	.
			Date Received	13/02/2021	13/02/2021	13/02/2021	13/02/2021	13/02/2021	13/02/2021
			SDG Ref	210213-65	210213-65	210213-65	210213-65	210213-65	210213-65
			Lab Sample No.(s)	23722489	23722493	23722500	23722507	23722517	23722524
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		92.7	94.8	92.9	92.6	92.9	95.2
Acenaphthene-d10 % recovery**	%	TM218		93	91.9	90.1	98.4	93.8	87.3
Phenanthrene-d10 % recovery**	%	TM218		101	93.4	92.4	103	94.1	84.4
Chrysene-d12 % recovery**	%	TM218		90.8	83.7	82.2	88.2	88.5	71.8
Perylene-d12 % recovery**	%	TM218		87.7	82.4	78.4	89.7	91	71.6
Naphthalene	<9 µg/kg	TM218		366 M	315 M	287 M	123 M	16.7 M	41.1 M
Acenaphthylene	<12 µg/kg	TM218		325 M	280 M	213 M	67.9 M	<12 M	<12 M
Acenaphthene	<8 µg/kg	TM218		44.4 M	<40 M	40.6 M	35.5 M	<8 M	<8 M
Fluorene	<10 µg/kg	TM218		166 M	132 M	119 M	196 M	<10 M	<10 M
Phenanthrene	<15 µg/kg	TM218		1290 M	989 M	976 M	951 M	31.4 M	55.4 M
Anthracene	<16 µg/kg	TM218		502 M	362 M	310 M	178 M	<16 M	<16 M
Fluoranthene	<17 µg/kg	TM218		2840 M	2450 M	2120 M	1080 M	46.3 M	68.3 M
Pyrene	<15 µg/kg	TM218		2160 M	1840 M	1660 M	751 M	37.4 M	56.5 M
Benz(a)anthracene	<14 µg/kg	TM218		1280 M	1010 M	938 M	413 M	21.3 M	26.8 M
Chrysene	<10 µg/kg	TM218		1260 M	981 M	893 M	348 M	18.2 M	28.6 M
Benzo(b)fluoranthene	<15 µg/kg	TM218		1960 M	1510 M	1360 M	529 M	26.1 M	42.5 M
Benzo(k)fluoranthene	<14 µg/kg	TM218		621 M	499 M	451 M	174 M	<14 M	<14 M
Benzo(a)pyrene	<15 µg/kg	TM218		1150 M	840 M	817 M	305 M	<15 M	23 M
Indeno(1,2,3-cd)pyrene	<18 µg/kg	TM218		926 M	700 M	652 M	262 M	<18 M	<18 M
Dibenzo(a,h)anthracene	<23 µg/kg	TM218		197 M	162 M	136 M	44 M	<23 M	<23 M
Benzo(g,h,i)perylene	<24 µg/kg	TM218		824 M	658 M	593 M	199 M	<24 M	<24 M
PAH, Total Detected USEPA 16	<118 µg/kg	TM218		15900	12700	11600	5650	197	342

Validated

CERTIFICATE OF ANALYSIS

SDG:	210213-65	**Client Reference:**	P18-669	**Report Number:**	588856
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	588583

PAH by GCMS

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	SPLF-9	SPLF-10	SPLF-11	SPLF-12	SPLF-13	SPLF-14
			Depth (m)	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	12/02/2021	12/02/2021	12/02/2021	12/02/2021	12/02/2021	12/02/2021
			Sample Time	.	.	.	.	.	.
			Date Received	13/02/2021	13/02/2021	13/02/2021	13/02/2021	13/02/2021	13/02/2021
			SDG Ref	210213-65	210213-65	210213-65	210213-65	210213-65	210213-65
			Lab Sample No.(s)	23722532	23722541	23722551	23722559	23722572	23722580
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		93.9	94.2	93.5	94.4	95.5	90.3
Acenaphthene-d10 % recovery**	%	TM218		88.7	95.6	90.7	89.9	92.4	93.4
Phenanthrene-d10 % recovery**	%	TM218		90.5	96.7	93.1	92.2	89.4	98.6
Chrysene-d12 % recovery**	%	TM218		82.6	89.6	83.2	84.2	86.2	81.2
Perylene-d12 % recovery**	%	TM218		81	89.5	81.6	85.6	82.8	80.9
Naphthalene	<9 µg/kg	TM218		53 M	135 M	324 M	75.7 M	176 M	388 M
Acenaphthylene	<12 µg/kg	TM218		15.1 M	23.7 M	224 M	22.9 M	196 M	320 M
Acenaphthene	<8 µg/kg	TM218		<8 M	21.5 M	41.2 M	<8 M	27.5 M	60.3 M
Fluorene	<10 µg/kg	TM218		<10 M	35.4 M	268 M	23.4 M	198 M	232 M
Phenanthrene	<15 µg/kg	TM218		82.7 M	209 M	1380 M	202 M	1120 M	1650 M
Anthracene	<16 µg/kg	TM218		22.4 M	47.7 M	323 M	38.4 M	398 M	489 M
Fluoranthene	<17 µg/kg	TM218		146 M	272 M	1830 M	365 M	1550 M	3380 M
Pyrene	<15 µg/kg	TM218		116 M	243 M	1420 M	260 M	1100 M	2520 M
Benz(a)anthracene	<14 µg/kg	TM218		65.9 M	147 M	783 M	114 M	652 M	1600 M
Chrysene	<10 µg/kg	TM218		67.3 M	159 M	758 M	95 M	617 M	1210 M
Benzo(b)fluoranthene	<15 µg/kg	TM218		94.2 M	193 M	1180 M	153 M	1010 M	2250 M
Benzo(k)fluoranthene	<14 µg/kg	TM218		28.5 M	55.9 M	376 M	51.1 M	294 M	693 M
Benzo(a)pyrene	<15 µg/kg	TM218		53.7 M	121 M	735 M	90 M	560 M	1310 M
Indeno(1,2,3-cd)pyrene	<18 µg/kg	TM218		41.6 M	94.8 M	570 M	71.2 M	454 M	1210 M
Dibenzo(a,h)anthracene	<23 µg/kg	TM218		<23 M	<23 M	117 M	<23 M	93.2 M	192 M
Benzo(g,h,i)perylene	<24 µg/kg	TM218		40 M	78.4 M	514 M	65.9 M	375 M	893 M
PAH, Total Detected USEPA 16	<118 µg/kg	TM218		827	1840	10800	1630	8820	18400

Validated

CERTIFICATE OF ANALYSIS

SDG:	210213-65	**Client Reference:**	P18-669	**Report Number:**	588856
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	588583

PAH by GCMS

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	SPLF-15	SPLF-16	SPLF-17	SPLF-18	SPLF-19	SPLF-20
			Depth (m)	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	12/02/2021	12/02/2021	12/02/2021	12/02/2021	12/02/2021	12/02/2021
			Sample Time	.	.	.	.	.	.
			Date Received	13/02/2021	13/02/2021	13/02/2021	13/02/2021	13/02/2021	13/02/2021
			SDG Ref	210213-65	210213-65	210213-65	210213-65	210213-65	210213-65
			Lab Sample No.(s)	23722584	23722589	23722594	23722598	23722604	23722608
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		91.4	92.9	101	92.3	94.3	90.5
Acenaphthene-d10 % recovery**	%	TM218		89.6	99.3	107	97.4	89.9	87.8
Phenanthrene-d10 % recovery**	%	TM218		93.6	103	111	102	87.4	89.3
Chrysene-d12 % recovery**	%	TM218		83.8	87.6	92.2	85.6	74.4	82.3
Perylene-d12 % recovery**	%	TM218		81.8	85.2	93.2	83.9	73.1	83.7
Naphthalene	<9 µg/kg	TM218		247 M	280 M	107 M	31.8 M	18.8 M	58.9 M
Acenaphthylene	<12 µg/kg	TM218		219 M	366 M	47.4 M	<12 M	<12 M	24.7 M
Acenaphthene	<8 µg/kg	TM218		30.5 M	50.2 M	21.9 M	<8 M	<8 M	<8 M
Fluorene	<10 µg/kg	TM218		144 M	347 M	43.5 M	<10 M	<10 M	18.9 M
Phenanthrene	<15 µg/kg	TM218		1040 M	2970 M	276 M	62.4 M	39 M	117 M
Anthracene	<16 µg/kg	TM218		338 M	782 M	77.5 M	<16 M	<16 M	33.9 M
Fluoranthene	<17 µg/kg	TM218		2060 M	5580 M	489 M	101 M	55.1 M	217 M
Pyrene	<15 µg/kg	TM218		1620 M	3690 M	391 M	82.7 M	41.5 M	173 M
Benz(a)anthracene	<14 µg/kg	TM218		888 M	2120 M	229 M	47.5 M	22.1 M	99.3 M
Chrysene	<10 µg/kg	TM218		827 M	1670 M	193 M	39.1 M	22.2 M	103 M
Benzo(b)fluoranthene	<15 µg/kg	TM218		1270 M	2710 M	340 M	68.1 M	29.3 M	159 M
Benzo(k)fluoranthene	<14 µg/kg	TM218		433 M	753 M	92.7 M	19.3 M	<14 M	48.5 M
Benzo(a)pyrene	<15 µg/kg	TM218		741 M	1480 M	190 M	39.8 M	<15 M	82.8 M
Indeno(1,2,3-cd)pyrene	<18 µg/kg	TM218		579 M	1350 M	173 M	33.2 M	<18 M	68.2 M
Dibenzo(a,h)anthracene	<23 µg/kg	TM218		129 M	235 M	27.1 M	<23 M	<23 M	<23 M
Benzo(g,h,i)perylene	<24 µg/kg	TM218		551 M	954 M	132 M	<24 M	<24 M	67.7 M
PAH, Total Detected USEPA 16	<118 µg/kg	TM218		11100	25300	2830	525	228	1270

Validated

CERTIFICATE OF ANALYSIS

SDG:	210213-65	**Client Reference:**	P18-669	**Report Number:**	588856
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	588583

PAH by GCMS

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	SPLF-21	SPLF-22	W127-1	W127-2	W127-3	W127-4
			Depth (m)	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	12/02/2021	12/02/2021	11/02/2021	11/02/2021	11/02/2021	11/02/2021
			Sample Time	.	.	.	.	.	.
			Date Received	13/02/2021	13/02/2021	13/02/2021	13/02/2021	13/02/2021	13/02/2021
			SDG Ref	210213-65	210213-65	210213-65	210213-65	210213-65	210213-65
			Lab Sample No.(s)	23722613	23722618	23722627	23722631	23722635	23722639
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		91.8	87.3	94.1	91.6	92.4	90.7
Acenaphthene-d10 % recovery**	%	TM218		93.5	89.7	93.5	90.4	91.1	90.7
Phenanthrene-d10 % recovery**	%	TM218		94.3	89.1	88.9	87.8	87.4	86.9
Chrysene-d12 % recovery**	%	TM218		86.6	78.6	58.7	59.3	56.9	56.8
Perylene-d12 % recovery**	%	TM218		88.6	80.7	39.3	40.7	38.4	36.6
Naphthalene	<9 µg/kg	TM218		192 M	198 M	89.9 M	102 M	91.4 M	78.6 M
Acenaphthylene	<12 µg/kg	TM218		26.7 M	86.1 M	<12 M	<12 M	<12 M	<12 M
Acenaphthene	<8 µg/kg	TM218		24.6 M	26.2 M	<8 M	<8 M	<8 M	<8 M
Fluorene	<10 µg/kg	TM218		44.2 M	82.4 M	54.1 M	59.7 M	48 M	43.7 M
Phenanthrene	<15 µg/kg	TM218		160 M	536 M	409 M	506 M	395 M	403 M
Anthracene	<16 µg/kg	TM218		35.4 M	145 M	113 M	178 M	110 M	139 M
Fluoranthene	<17 µg/kg	TM218		167 M	875 M	297 M	378 M	283 M	288 M
Pyrene	<15 µg/kg	TM218		136 M	689 M	293 M	332 M	282 M	253 M
Benz(a)anthracene	<14 µg/kg	TM218		97 M	419 M	147 M	181 M	153 M	136 M
Chrysene	<10 µg/kg	TM218		86.8 M	378 M	234 M	301 M	255 M	238 M
Benzo(b)fluoranthene	<15 µg/kg	TM218		153 M	615 M	389 M	500 M	387 M	399 M
Benzo(k)fluoranthene	<14 µg/kg	TM218		50.5 M	179 M	59.4 M	116 M	80.6 M	80.3 M
Benzo(a)pyrene	<15 µg/kg	TM218		93 M	346 M	61.9 M	97.4 M	70.3 M	65.5 M
Indeno(1,2,3-cd)pyrene	<18 µg/kg	TM218		78.2 M	308 M	75.2 M	108 M	84.2 M	82.8 M
Dibenzo(a,h)anthracene	<23 µg/kg	TM218		<23 M	41.4 M	<23 M	37.7 M	<23 M	<23 M
Benzo(g,h,i)perylene	<24 µg/kg	TM218		65.9 M	247 M	101 M	154 M	118 M	123 M
PAH, Total Detected USEPA 16	<118 µg/kg	TM218		1410	5170	2320	3050	2360	2330

Validated

CERTIFICATE OF ANALYSIS

SDG:	210213-65	**Client Reference:**	P18-669	**Report Number:**	588856
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	588583

PAH by GCMS

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	W127-5	W127-6	W210-1	W210-2	W210-3	W211-1
			Depth (m)	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	11/02/2021	11/02/2021	11/02/2021	11/02/2021	11/02/2021	11/02/2021
			Sample Time	.	.	.	.	.	.
			Date Received	13/02/2021	13/02/2021	13/02/2021	13/02/2021	13/02/2021	13/02/2021
			SDG Ref	210213-65	210213-65	210213-65	210213-65	210213-65	210213-65
			Lab Sample No.(s)	23722644	23722441	23722445	23722449	23722454	23722458
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		92.8	91.9	95.3	92.2	96.3	96.1
Acenaphthene-d10 % recovery**	%	TM218		89.6	91.6	102	97.7	98.8	97.1
Phenanthrene-d10 % recovery**	%	TM218		87.9	89	105	102	103	98.7
Chrysene-d12 % recovery**	%	TM218		66.8	67.7	87.7	87	92.9	91.3
Perylene-d12 % recovery**	%	TM218		51.2	53.5	86.2	86.1	96.5	96.1
Naphthalene	<9 µg/kg	TM218		47.8 M	49.4 M	385 M	298 M	341 M	153 M
Acenaphthylene	<12 µg/kg	TM218		<12 M	<12 M	353 M	248 M	241 M	129 M
Acenaphthene	<8 µg/kg	TM218		<8 M	<8 M	44.5 M	40.7 M	38.2 M	<40 M
Fluorene	<10 µg/kg	TM218		20.8 M	23.5 M	194 M	135 M	141 M	55.8 M
Phenanthrene	<15 µg/kg	TM218		207 M	238 M	1510 M	1030 M	1160 M	459 M
Anthracene	<16 µg/kg	TM218		57.8 M	67.6 M	471 M	344 M	382 M	158 M
Fluoranthene	<17 µg/kg	TM218		205 M	249 M	3090 M	2260 M	2570 M	1240 M
Pyrene	<15 µg/kg	TM218		192 M	231 M	2340 M	1690 M	1920 M	1150 M
Benz(a)anthracene	<14 µg/kg	TM218		109 M	123 M	1520 M	1130 M	1170 M	594 M
Chrysene	<10 µg/kg	TM218		175 M	185 M	1270 M	914 M	968 M	673 M
Benzo(b)fluoranthene	<15 µg/kg	TM218		236 M	257 M	2350 M	1740 M	1850 M	991 M
Benzo(k)fluoranthene	<14 µg/kg	TM218		48.1 M	60.3 M	681 M	495 M	458 M	296 M
Benzo(a)pyrene	<15 µg/kg	TM218		57.6 M	74.9 M	1350 M	991 M	1110 M	555 M
Indeno(1,2,3-cd)pyrene	<18 µg/kg	TM218		68 M	76.5 M	1280 M	926 M	1010 M	540 M
Dibenzo(a,h)anthracene	<23 µg/kg	TM218		<23 M	<23 M	196 M	146 M	177 M	<115 M
Benzo(g,h,i)perylene	<24 µg/kg	TM218		77.1 M	91.6 M	972 M	711 M	844 M	477 M
PAH, Total Detected USEPA 16	<118 µg/kg	TM218		1500	1730	18000	13100	14400	7460

CERTIFICATE OF ANALYSIS

SDG:	210213-65	**Client Reference:**	P18-669	**Report Number:**	588856
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	588583

PAH by GCMS

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	W211-2	W211-3	W211-4
			Depth (m)	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	11/02/2021	11/02/2021	11/02/2021
			Sample Time	.	.	.
			Date Received	13/02/2021	13/02/2021	13/02/2021
			SDG Ref	210213-65	210213-65	210213-65
			Lab Sample No.(s)	23722462	23722466	23722473
			AGS Reference			
Naphthalene-d8 % recovery**	%	TM218		94.3	101	91.8
Acenaphthene-d10 % recovery**	%	TM218		89.7	98.3	91.1
Phenanthrene-d10 % recovery**	%	TM218		84.4	96.6	95.8
Chrysene-d12 % recovery**	%	TM218		76.8	98	87.3
Perylene-d12 % recovery**	%	TM218		75.2	105	84.9
Naphthalene	<9 µg/kg	TM218		259 M	143 M	556 M
Acenaphthylene	<12 µg/kg	TM218		219 M	148 M	242 M
Acenaphthene	<8 µg/kg	TM218		<40 M	<80 M	1980 M
Fluorene	<10 µg/kg	TM218		104 M	<100 M	1310 M
Phenanthrene	<15 µg/kg	TM218		847 M	739 M	5160 M
Anthracene	<16 µg/kg	TM218		273 M	223 M	1600 M
Fluoranthene	<17 µg/kg	TM218		1460 M	1640 M	5580 M
Pyrene	<15 µg/kg	TM218		1120 M	1470 M	4530 M
Benz(a)anthracene	<14 µg/kg	TM218		684 M	798 M	2380 M
Chrysene	<10 µg/kg	TM218		652 M	730 M	1950 M
Benzo(b)fluoranthene	<15 µg/kg	TM218		1030 M	1250 M	2500 M
Benzo(k)fluoranthene	<14 µg/kg	TM218		319 M	447 M	1010 M
Benzo(a)pyrene	<15 µg/kg	TM218		627 M	707 M	1700 M
Indeno(1,2,3-cd)pyrene	<18 µg/kg	TM218		537 M	697 M	1010 M
Dibenzo(a,h)anthracene	<23 µg/kg	TM218		<115 M	<230 M	168 M
Benzo(g,h,i)perylene	<24 µg/kg	TM218		450 M	637 M	891 M
PAH, Total Detected USEPA 16	<118 µg/kg	TM218		8580	9630	32600

CERTIFICATE OF ANALYSIS

SDG:	210213-65	**Client Reference:**	P18-669	**Report Number:**	588856
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	588583

TPH CWG (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	SPAN-1	SPAN-2	SPAN-3	SPAN-4	SPLF-1	SPLF-2
			Depth (m)	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	11/02/2021	11/02/2021	11/02/2021	11/02/2021	12/02/2021	12/02/2021
			Sample Time	.	.	.	.	.	.
			Date Received	13/02/2021	13/02/2021	13/02/2021	13/02/2021	13/02/2021	13/02/2021
			SDG Ref	210213-65	210213-65	210213-65	210213-65	210213-65	210213-65
			Lab Sample No.(s)	23722437	23722485	23722565	23722622	23722477	23722481
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		74.8	92.3	77.5	97	81	80.1
Aliphatics >C5-C6	<10 µg/kg	TM089		<10	<10	<10	<10	<10	<10
Aliphatics >C6-C8	<10 µg/kg	TM089		<10	<10	<10	<10	<10	<10
Aliphatics >C8-C10	<10 µg/kg	TM089		<10	<10	<10	<10	<10	<10
Aliphatics >C10-C12	<1000 µg/kg	TM414		<1000	<1000	<1000	<1000	<1000	<1000
Aliphatics >C12-C16	<1000 µg/kg	TM414		1450	2500	1490	2480	<1000	<1000
Aliphatics >C16-C21	<1000 µg/kg	TM414		13300	17700	14600	18600	<1000	3030
Aliphatics >C21-C35	<1000 µg/kg	TM414		118000	121000	131000	138000	<1000	15000
Aliphatics >C35-C44	<1000 µg/kg	TM414		64000	63500	62800	69700	<1000	3540
Total Aliphatics >C10-C44	<5000 µg/kg	TM414		197000	205000	210000	229000	<5000	21900
Total Aliphatics & Aromatics >C10-C44	<10000 µg/kg	TM414		217000	231000	232000	260000	21800	38800
Aromatics >EC5-EC7	<10 µg/kg	TM089		<10	<10	<10	<10	<10	<10
Aromatics >EC7-EC8	<10 µg/kg	TM089		<10	<10	<10	<10	<10	<10
Aromatics >EC8-EC10	<10 µg/kg	TM089		<10	<10	<10	<10	<10	<10
Aromatics > EC10-EC12	<1000 µg/kg	TM414		<1000	<1000	<1000	<1000	<1000	<1000
Aromatics > EC12-EC16	<1000 µg/kg	TM414		<1000	<1000	<1000	1360	<1000	<1000
Aromatics > EC16-EC21	<1000 µg/kg	TM414		2400	3370	3090	4170	7540	3660
Aromatics > EC21-EC35	<1000 µg/kg	TM414		17300	20800	17500	23600	12500	12000
Aromatics >EC35-EC44	<1000 µg/kg	TM414		<1000	1050	<1000	1730	<1000	<1000
Aromatics > EC40-EC44	<1000 µg/kg	TM414		<1000	<1000	<1000	<1000	<1000	<1000
Total Aromatics > EC10-EC44	<5000 µg/kg	TM414		20900	25900	21900	31100	21100	16800
Total Aliphatics & Aromatics >C5-C44	<10000 µg/kg	TM414		217000	231000	232000	260000	21100	38800
Total Aliphatics >C5-C10	<50 µg/kg	TM089		<50	<50	<50	<50	<50	<50
Total Aromatics >EC5-EC10	<50 µg/kg	TM089		<50	<50	<50	<50	<50	<50
GRO >C5-C10	<20 µg/kg	TM089		<20	<20	<20	<20	<20	<20

Validated

CERTIFICATE OF ANALYSIS

SDG:	210213-65	**Client Reference:**	P18-669	**Report Number:**	588856
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	588583

TPH CWG (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	SPLF-3	SPLF-4	SPLF-5	SPLF-6	SPLF-7	SPLF-8
			Depth (m)	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	12/02/2021	12/02/2021	12/02/2021	12/02/2021	12/02/2021	12/02/2021
			Sample Time	.	.	.	.	.	.
			Date Received	13/02/2021	13/02/2021	13/02/2021	13/02/2021	13/02/2021	13/02/2021
			SDG Ref	210213-65	210213-65	210213-65	210213-65	210213-65	210213-65
			Lab Sample No.(s)	23722489	23722493	23722500	23722507	23722517	23722524
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		92.1	119	82.7	82.3	97.5	94.6
Aliphatics >C5-C6	<10 µg/kg	TM089		<10	<10	<10	<10	<10	<10
Aliphatics >C6-C8	<10 µg/kg	TM089		<10	<10	<10	<10	<10	<10
Aliphatics >C8-C10	<10 µg/kg	TM089		<10	<10	<10	<10	<10	<10
Aliphatics >C10-C12	<1000 µg/kg	TM414		<1000	<1000	<1000	<1000	<1000	<1000
Aliphatics >C12-C16	<1000 µg/kg	TM414		1330	1400	2270	<1000	<1000	<1000
Aliphatics >C16-C21	<1000 µg/kg	TM414		6800	7450	9960	<1000	<1000	<1000
Aliphatics >C21-C35	<1000 µg/kg	TM414		29300	42500	43800	5530	1040	1920
Aliphatics >C35-C44	<1000 µg/kg	TM414		13000	11000	12900	<1000	<1000	<1000
Total Aliphatics >C10-C44	<5000 µg/kg	TM414		50400	62300	69100	6420	<5000	<5000
Total Aliphatics & Aromatics >C10-C44	<10000 µg/kg	TM414		103000	102000	116000	10200	<10000	<10000
Aromatics >EC5-EC7	<10 µg/kg	TM089		<10	<10	<10	<10	<10	<10
Aromatics >EC7-EC8	<10 µg/kg	TM089		<10	<10	<10	<10	<10	<10
Aromatics >EC8-EC10	<10 µg/kg	TM089		<10	<10	<10	<10	<10	<10
Aromatics > EC10-EC12	<1000 µg/kg	TM414		<1000	<1000	<1000	<1000	<1000	<1000
Aromatics > EC12-EC16	<1000 µg/kg	TM414		<1000	<1000	1070	<1000	<1000	<1000
Aromatics > EC16-EC21	<1000 µg/kg	TM414		9420	7820	8550	<1000	<1000	<1000
Aromatics > EC21-EC35	<1000 µg/kg	TM414		39500	27900	33200	1990	<1000	<1000
Aromatics >EC35-EC44	<1000 µg/kg	TM414		2580	2710	3810	<1000	<1000	<1000
Aromatics > EC40-EC44	<1000 µg/kg	TM414		<1000	<1000	<1000	<1000	<1000	<1000
Total Aromatics > EC10-EC44	<5000 µg/kg	TM414		52600	39300	47000	<5000	<5000	<5000
Total Aliphatics & Aromatics >C5-C44	<10000 µg/kg	TM414		103000	102000	116000	<10000	<10000	<10000
Total Aliphatics >C5-C10	<50 µg/kg	TM089		<50	<50	<50	<50	<50	<50
Total Aromatics >EC5-EC10	<50 µg/kg	TM089		<50	<50	<50	<50	<50	<50
GRO >C5-C10	<20 µg/kg	TM089		<20	<20	<20	<20	<20	<20

CERTIFICATE OF ANALYSIS

SDG:	210213-65	**Client Reference:**	P18-669	**Report Number:**	588856
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	588583

TPH CWG (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	SPLF-9	SPLF-10	SPLF-11	SPLF-12	SPLF-13	SPLF-14
			Depth (m)	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	12/02/2021	12/02/2021	12/02/2021	12/02/2021	12/02/2021	12/02/2021
			Sample Time	.	.	.	.	.	.
			Date Received	13/02/2021	13/02/2021	13/02/2021	13/02/2021	13/02/2021	13/02/2021
			SDG Ref	210213-65	210213-65	210213-65	210213-65	210213-65	210213-65
			Lab Sample No.(s)	23722532	23722541	23722551	23722559	23722572	23722580
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		88.4	68.9 4	76.3	83.9	80.4	73
Aliphatics >C5-C6	<10 µg/kg	TM089		<10	<10 4	<10	<10	<10	<10
Aliphatics >C6-C8	<10 µg/kg	TM089		14.8	<10 4	<10	<10	<10	<10
Aliphatics >C8-C10	<10 µg/kg	TM089		55.4	<10 4	<10	<10	<10	<10
Aliphatics >C10-C12	<1000 µg/kg	TM414		<1000	<1000	<1000	<1000	<1000	<1000
Aliphatics >C12-C16	<1000 µg/kg	TM414		<1000	<1000	2110	<1000	<1000	<1000
Aliphatics >C16-C21	<1000 µg/kg	TM414		<1000	4250	10200	<1000	5540	6210
Aliphatics >C21-C35	<1000 µg/kg	TM414		5420	8670	48500	<1000	27200	29800
Aliphatics >C35-C44	<1000 µg/kg	TM414		1520	<1000	14300	<1000	7920	11500
Total Aliphatics >C10-C44	<5000 µg/kg	TM414		7510	13800	75000	<5000	41400	48300
Total Aliphatics & Aromatics >C10-C44	<10000 µg/kg	TM414		12600	18900	104000	<10000	63900	106000
Aromatics >EC5-EC7	<10 µg/kg	TM089		<10	<10 4	<10	<10	<10	<10
Aromatics >EC7-EC8	<10 µg/kg	TM089		<10	<10 4	<10	<10	<10	<10
Aromatics >EC8-EC10	<10 µg/kg	TM089		36.9	<10 4	<10	<10	<10	<10
Aromatics > EC10-EC12	<1000 µg/kg	TM414		<1000	<1000	<1000	<1000	<1000	<1000
Aromatics > EC12-EC16	<1000 µg/kg	TM414		<1000	<1000	<1000	<1000	<1000	<1000
Aromatics > EC16-EC21	<1000 µg/kg	TM414		<1000	<1000	4830	2000	3600	7560
Aromatics > EC21-EC35	<1000 µg/kg	TM414		3250	3200	22900	2690	17600	44200
Aromatics >EC35-EC44	<1000 µg/kg	TM414		<1000	<1000	<1000	<1000	<1000	4990
Aromatics > EC40-EC44	<1000 µg/kg	TM414		<1000	<1000	<1000	<1000	<1000	1190
Total Aromatics > EC10-EC44	<5000 µg/kg	TM414		5050	5180	29300	6030	22500	57400
Total Aliphatics & Aromatics >C5-C44	<10000 µg/kg	TM414		12700	18900	104000	<10000	63900	106000
Total Aliphatics >C5-C10	<50 µg/kg	TM089		70.1	<50 4	<50	<50	<50	<50
Total Aromatics >EC5-EC10	<50 µg/kg	TM089		<50	<50 4	<50	<50	<50	<50
GRO >C5-C10	<20 µg/kg	TM089		70.1	<20 4	<20	<20	<20	<20

Validated

CERTIFICATE OF ANALYSIS

SDG:	210213-65	**Client Reference:**	P18-669	**Report Number:**	588856
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	588583

TPH CWG (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	SPLF-15	SPLF-16	SPLF-17	SPLF-18	SPLF-19	SPLF-20
			Depth (m)	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	12/02/2021	12/02/2021	12/02/2021	12/02/2021	12/02/2021	12/02/2021
			Sample Time	.	.	.	.	.	.
			Date Received	13/02/2021	13/02/2021	13/02/2021	13/02/2021	13/02/2021	13/02/2021
			SDG Ref	210213-65	210213-65	210213-65	210213-65	210213-65	210213-65
			Lab Sample No.(s)	23722584	23722589	23722594	23722598	23722604	23722608
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		70.1	96.7	103	97.6	92	113
Aliphatics >C5-C6	<10 µg/kg	TM089		<10	<10	11.2	<10	<10	<10
Aliphatics >C6-C8	<10 µg/kg	TM089		<10	<10	11.2	<10	<10	10.6
Aliphatics >C8-C10	<10 µg/kg	TM089		<10	<10	23.5	<10	23.8	22.4
Aliphatics >C10-C12	<1000 µg/kg	TM414		<1000	<1000	<1000	<1000	<1000	<1000
Aliphatics >C12-C16	<1000 µg/kg	TM414		<1000	<1000	1440	<1000	<1000	<1000
Aliphatics >C16-C21	<1000 µg/kg	TM414		4840	5220	4020	<1000	<1000	2090
Aliphatics >C21-C35	<1000 µg/kg	TM414		25300	26600	17700	3750	2000	10200
Aliphatics >C35-C44	<1000 µg/kg	TM414		7360	6190	3520	<1000	<1000	<1000
Total Aliphatics >C10-C44	<5000 µg/kg	TM414		38100	38700	26700	5020	<5000	13600
Total Aliphatics & Aromatics >C10-C44	<10000 µg/kg	TM414		62200	73700	33800	<10000	<10000	19500
Aromatics >EC5-EC7	<10 µg/kg	TM089		<10	<10	<10	<10	<10	<10
Aromatics >EC7-EC8	<10 µg/kg	TM089		<10	<10	<10	<10	<10	<10
Aromatics >EC8-EC10	<10 µg/kg	TM089		<10	<10	15.7	<10	16.3	15.3
Aromatics > EC10-EC12	<1000 µg/kg	TM414		<1000	<1000	<1000	<1000	<1000	<1000
Aromatics > EC12-EC16	<1000 µg/kg	TM414		<1000	<1000	<1000	<1000	<1000	<1000
Aromatics > EC16-EC21	<1000 µg/kg	TM414		4080	7080	<1000	<1000	<1000	<1000
Aromatics > EC21-EC35	<1000 µg/kg	TM414		18400	26200	5070	1770	<1000	3840
Aromatics >EC35-EC44	<1000 µg/kg	TM414		1290	1220	<1000	<1000	<1000	<1000
Aromatics > EC40-EC44	<1000 µg/kg	TM414		<1000	<1000	<1000	<1000	<1000	<1000
Total Aromatics > EC10-EC44	<5000 µg/kg	TM414		24100	35000	7120	<5000	<5000	5830
Total Aliphatics & Aromatics >C5-C44	<10000 µg/kg	TM414		62200	73700	33900	<10000	<10000	19500
Total Aliphatics >C5-C10	<50 µg/kg	TM089		<50	<50	<50	<50	<50	<50
Total Aromatics >EC5-EC10	<50 µg/kg	TM089		<50	<50	<50	<50	<50	<50
GRO >C5-C10	<20 µg/kg	TM089		<20	<20	<20	<20	<20	<20

Validated

CERTIFICATE OF ANALYSIS

SDG:	210213-65	**Client Reference:**	P18-669	**Report Number:**	588856
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	588583

TPH CWG (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	SPLF-21	SPLF-22	W127-1	W127-2	W127-3	W127-4
			Depth (m)	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	12/02/2021	12/02/2021	11/02/2021	11/02/2021	11/02/2021	11/02/2021
			Sample Time	.	.	.	.	.	.
			Date Received	13/02/2021	13/02/2021	13/02/2021	13/02/2021	13/02/2021	13/02/2021
			SDG Ref	210213-65	210213-65	210213-65	210213-65	210213-65	210213-65
			Lab Sample No.(s)	23722613	23722618	23722627	23722631	23722635	23722639
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		71	102	37.8 4	82.2	67 4	72.3
Aliphatics >C5-C6	<10 µg/kg	TM089		<10	<10	<10 4	<10	<10 4	<10
Aliphatics >C6-C8	<10 µg/kg	TM089		<10	<10	<10 4	<10	12.7 4	<10
Aliphatics >C8-C10	<10 µg/kg	TM089		<10	<10	<10 4	<10	11.4 4	<10
Aliphatics >C10-C12	<1000 µg/kg	TM414		<1000	<1000	<1000	<1000	<1000	<1000
Aliphatics >C12-C16	<1000 µg/kg	TM414		<1000	<1000	1100	<1000	<1000	<1000
Aliphatics >C16-C21	<1000 µg/kg	TM414		15900	<1000	35900	51600	28600	41500
Aliphatics >C21-C35	<1000 µg/kg	TM414		19000	8130	117000	196000	126000	148000
Aliphatics >C35-C44	<1000 µg/kg	TM414		2100	1980	18900	31200	25900	23000
Total Aliphatics >C10-C44	<5000 µg/kg	TM414		37600	10100	173000	279000	181000	212000
Total Aliphatics & Aromatics >C10-C44	<10000 µg/kg	TM414		47700	17100	219000	343000	225000	258000
Aromatics >EC5-EC7	<10 µg/kg	TM089		<10	<10	<10 4	<10	<10 4	<10
Aromatics >EC7-EC8	<10 µg/kg	TM089		<10	<10	<10 4	<10	<10 4	<10
Aromatics >EC8-EC10	<10 µg/kg	TM089		<10	<10	<10 4	<10	<10 4	<10
Aromatics > EC10-EC12	<1000 µg/kg	TM414		<1000	<1000	<1000	<1000	<1000	<1000
Aromatics > EC12-EC16	<1000 µg/kg	TM414		<1000	<1000	1150	<1000	<1000	<1000
Aromatics > EC16-EC21	<1000 µg/kg	TM414		1790	<1000	7960	3300	5480	2000
Aromatics > EC21-EC35	<1000 µg/kg	TM414		6530	5700	35500	59100	36100	42800
Aromatics >EC35-EC44	<1000 µg/kg	TM414		<1000	<1000	1240	1390	1140	1240
Aromatics > EC40-EC44	<1000 µg/kg	TM414		<1000	<1000	<1000	<1000	<1000	<1000
Total Aromatics > EC10-EC44	<5000 µg/kg	TM414		10100	7020	46000	63800	43500	46000
Total Aliphatics & Aromatics >C5-C44	<10000 µg/kg	TM414		47700	17100	219000	343000	225000	258000
Total Aliphatics >C5-C10	<50 µg/kg	TM089		<50	<50	<50 4	<50	<50 4	<50
Total Aromatics >EC5-EC10	<50 µg/kg	TM089		<50	<50	<50 4	<50	<50 4	<50
GRO >C5-C10	<20 µg/kg	TM089		<20	<20	<20 4	<20	<20 4	<20

Validated

CERTIFICATE OF ANALYSIS

SDG:	210213-65	**Client Reference:**	P18-669	**Report Number:**	588856
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	588583

TPH CWG (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	W127-5	W127-6	W210-1	W210-2	W210-3	W211-1
			Depth (m)	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	11/02/2021	11/02/2021	11/02/2021	11/02/2021	11/02/2021	11/02/2021
			Sample Time	.	.	.	.	.	.
			Date Received	13/02/2021	13/02/2021	13/02/2021	13/02/2021	13/02/2021	13/02/2021
			SDG Ref	210213-65	210213-65	210213-65	210213-65	210213-65	210213-65
			Lab Sample No.(s)	23722644	23722441	23722445	23722449	23722454	23722458
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		72	73.2	77.9	77	75.8	85.3
Aliphatics >C5-C6	<10 µg/kg	TM089		<10	<10	<10	<10	<10	<10
Aliphatics >C6-C8	<10 µg/kg	TM089		<10	<10	<10	<10	<10	<10
Aliphatics >C8-C10	<10 µg/kg	TM089		<10	<10	<10	<10	<10	<10
Aliphatics >C10-C12	<1000 µg/kg	TM414		<1000	<1000	<1000	<1000	<1000	<1000
Aliphatics >C12-C16	<1000 µg/kg	TM414		<1000	<1000	1770	2190	1600	9510
Aliphatics >C16-C21	<1000 µg/kg	TM414		15900	16200	10400	12700	7740	23100
Aliphatics >C21-C35	<1000 µg/kg	TM414		80900	72900	60100	66800	44800	128000
Aliphatics >C35-C44	<1000 µg/kg	TM414		15000	14400	19400	21400	15600	119000
Total Aliphatics >C10-C44	<5000 µg/kg	TM414		112000	104000	91700	103000	69700	280000
Total Aliphatics & Aromatics >C10-C44	<10000 µg/kg	TM414		135000	127000	154000	183000	120000	348000
Aromatics >EC5-EC7	<10 µg/kg	TM089		<10	<10	<10	<10	<10	<10
Aromatics >EC7-EC8	<10 µg/kg	TM089		<10	<10	<10	<10	<10	<10
Aromatics >EC8-EC10	<10 µg/kg	TM089		<10	<10	<10	<10	<10	<10
Aromatics > EC10-EC12	<1000 µg/kg	TM414		<1000	<1000	<1000	<1000	<1000	<1000
Aromatics > EC12-EC16	<1000 µg/kg	TM414		<1000	<1000	<1000	1830	<1000	<1000
Aromatics > EC16-EC21	<1000 µg/kg	TM414		1330	2640	9590	14300	8630	5190
Aromatics > EC21-EC35	<1000 µg/kg	TM414		20100	19400	47700	56800	37400	57600
Aromatics >EC35-EC44	<1000 µg/kg	TM414		<1000	<1000	4360	6220	3200	4260
Aromatics > EC40-EC44	<1000 µg/kg	TM414		<1000	<1000	<1000	1570	<1000	<1000
Total Aromatics > EC10-EC44	<5000 µg/kg	TM414		22400	23200	62500	79700	50100	67900
Total Aliphatics & Aromatics >C5-C44	<10000 µg/kg	TM414		135000	127000	154000	183000	120000	348000
Total Aliphatics >C5-C10	<50 µg/kg	TM089		<50	<50	<50	<50	<50	<50
Total Aromatics >EC5-EC10	<50 µg/kg	TM089		<50	<50	<50	<50	<50	<50
GRO >C5-C10	<20 µg/kg	TM089		<20	<20	<20	<20	<20	<20

Validated

CERTIFICATE OF ANALYSIS

SDG:	210213-65	**Client Reference:**	P18-669	**Report Number:**	588856
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	588583

TPH CWG (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	W211-2	W211-3	W211-4			
			Depth (m)	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20			
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)			
			Date Sampled	11/02/2021	11/02/2021	11/02/2021			
			Sample Time	.	.	.			
			Date Received	13/02/2021	13/02/2021	13/02/2021			
			SDG Ref	210213-65	210213-65	210213-65			
			Lab Sample No.(s)	23722462	23722466	23722473			
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		85.3	107	78			
Aliphatics >C5-C6	<10 µg/kg	TM089		<10	<10	<10			
Aliphatics >C6-C8	<10 µg/kg	TM089		<10	<10	<10			
Aliphatics >C8-C10	<10 µg/kg	TM089		<10	<10	<10			
Aliphatics >C10-C12	<1000 µg/kg	TM414		<1000	<1000	<1000			
Aliphatics >C12-C16	<1000 µg/kg	TM414		<1000	12700	1890			
Aliphatics >C16-C21	<1000 µg/kg	TM414		5550	28700	6590			
Aliphatics >C21-C35	<1000 µg/kg	TM414		63700	145000	43500			
Aliphatics >C35-C44	<1000 µg/kg	TM414		23200	132000	22500			
Total Aliphatics >C10-C44	<5000 µg/kg	TM414		93400	318000	74500			
Total Aliphatics & Aromatics >C10-C44	<10000 µg/kg	TM414		126000	395000	107000			
Aromatics >EC5-EC7	<10 µg/kg	TM089		<10	<10	<10			
Aromatics >EC7-EC8	<10 µg/kg	TM089		<10	<10	<10			
Aromatics >EC8-EC10	<10 µg/kg	TM089		<10	<10	<10			
Aromatics > EC10-EC12	<1000 µg/kg	TM414		<1000	<1000	<1000			
Aromatics > EC12-EC16	<1000 µg/kg	TM414		<1000	1110	<1000			
Aromatics > EC16-EC21	<1000 µg/kg	TM414		5150	6010	4150			
Aromatics > EC21-EC35	<1000 µg/kg	TM414		24600	64900	25300			
Aromatics >EC35-EC44	<1000 µg/kg	TM414		1630	4810	2900			
Aromatics > EC40-EC44	<1000 µg/kg	TM414		<1000	<1000	<1000			
Total Aromatics > EC10-EC44	<5000 µg/kg	TM414		32200	77000	32900			
Total Aliphatics & Aromatics >C5-C44	<10000 µg/kg	TM414		126000	395000	107000			
Total Aliphatics >C5-C10	<50 µg/kg	TM089		<50	<50	<50			
Total Aromatics >EC5-EC10	<50 µg/kg	TM089		<50	<50	<50			
GRO >C5-C10	<20 µg/kg	TM089		<20	<20	<20			

CERTIFICATE OF ANALYSIS

SDG:	210213-65	**Client Reference:**	P18-669	**Report Number:**	588856
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	588583

VOC MS (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	SPAN-1	SPAN-2	SPAN-3	SPAN-4	SPLF-1	SPLF-2
			Depth (m)	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	11/02/2021	11/02/2021	11/02/2021	11/02/2021	12/02/2021	12/02/2021
			Sample Time	.	.	.	.	.	.
			Date Received	13/02/2021	13/02/2021	13/02/2021	13/02/2021	13/02/2021	13/02/2021
			SDG Ref	210213-65	210213-65	210213-65	210213-65	210213-65	210213-65
			Lab Sample No.(s)	23722437	23722485	23722565	23722622	23722477	23722481
			AGS Reference						
Dibromofluoromethane**	%	TM116		105	110	105	105	118	105
Toluene-d8**	%	TM116		98	95.5	97.7	97.3	100	98.6
4-Bromofluorobenzene**	%	TM116		97.7	95.1	93.8	96.3	95.9	95
Methyl Tertiary Butyl Ether	<10 µg/kg	TM116		<200 M	<200 M	<200 M	<200 M	<200 M	<200 M
Benzene	<9 µg/kg	TM116		<180 M	<180 M	<180 M	<180 M	<180 M	<180 M
Toluene	<7 µg/kg	TM116		<140 M	<140 M	<140 M	<140 M	<140 M	<140 M
Ethylbenzene	<4 µg/kg	TM116		<80 M	<80 M	<80 M	<80 M	<80 M	<80 M
p/m-Xylene	<10 µg/kg	TM116		<200 #	<200 #	<200 #	<200 #	<200 #	<200 #
o-Xylene	<10 µg/kg	TM116		<200 M	<200 M	<200 M	<200 M	<200 M	<200 M
Naphthalene	<13 µg/kg	TM116		<260 M	<260 M	<260 M	<260 M	<260 M	<260 M
Sum of Detected Xylenes	<0.02 mg/kg	TM116		<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Sum of BTEX	<40 µg/kg	TM116		<800	<800	<800	<800	<800	<800

Validated

CERTIFICATE OF ANALYSIS

SDG:	210213-65	**Client Reference:**	P18-669	**Report Number:**	588856
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	588583

VOC MS (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	SPLF-3	SPLF-4	SPLF-5	SPLF-6	SPLF-7	SPLF-8
			Depth (m)	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	12/02/2021	12/02/2021	12/02/2021	12/02/2021	12/02/2021	12/02/2021
			Sample Time	.	.	.	.	.	.
			Date Received	13/02/2021	13/02/2021	13/02/2021	13/02/2021	13/02/2021	13/02/2021
			SDG Ref	210213-65	210213-65	210213-65	210213-65	210213-65	210213-65
			Lab Sample No.(s)	23722489	23722493	23722500	23722507	23722517	23722524
			AGS Reference						
Dibromofluoromethane**	%	TM116		105	104	108	95.6	112	104
Toluene-d8**	%	TM116		98.4	99.1	99.2	99.4	99.3	98.4
4-Bromofluorobenzene**	%	TM116		90	92.9	90.8	96.4	95.4	92.1
Methyl Tertiary Butyl Ether	<10 µg/kg	TM116		<200 M	<200 M	<200 M	<200 M	<200 M	<200 M
Benzene	<9 µg/kg	TM116		<180 M	<180 M	<180 M	<180 M	<180 M	<180 M
Toluene	<7 µg/kg	TM116		<140 M	<140 M	<140 M	<140 M	<140 M	<140 M
Ethylbenzene	<4 µg/kg	TM116		<80 M	<80 M	<80 M	<80 M	<80 M	<80 M
p/m-Xylene	<10 µg/kg	TM116		<200 #	<200 #	<200 #	<200 #	<200 #	<200 #
o-Xylene	<10 µg/kg	TM116		<200 M	<200 M	<200 M	<200 M	<200 M	<200 M
Naphthalene	<13 µg/kg	TM116		<260 M	<260 M	<260 M	<260 M	<260 M	<260 M
Sum of Detected Xylenes	<0.02 mg/kg	TM116		<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Sum of BTEX	<40 µg/kg	TM116		<800	<800	<800	<800	<800	<800

CERTIFICATE OF ANALYSIS

SDG:	210213-65	**Client Reference:**	P18-669	**Report Number:**	588856
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	588583

VOC MS (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	SPLF-9	SPLF-10	SPLF-11	SPLF-12	SPLF-13	SPLF-14
			Depth (m)	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	12/02/2021	12/02/2021	12/02/2021	12/02/2021	12/02/2021	12/02/2021
			Sample Time	.	.	.	.	.	.
			Date Received	13/02/2021	13/02/2021	13/02/2021	13/02/2021	13/02/2021	13/02/2021
			SDG Ref	210213-65	210213-65	210213-65	210213-65	210213-65	210213-65
			Lab Sample No.(s)	23722532	23722541	23722551	23722559	23722572	23722580
			AGS Reference						
Dibromofluoromethane**	%	TM116		115	103	114	105	111	104
Toluene-d8**	%	TM116		99.8	98.8	98.6	97.8	99.4	98.2
4-Bromofluorobenzene**	%	TM116		93.8	97	93.5	91.6	90.1	88.8
Methyl Tertiary Butyl Ether	<10 µg/kg	TM116		<200 M	<200 M	<200 M	<200 M	<200 M	<200 M
Benzene	<9 µg/kg	TM116		<180 M	<180 M	<180 M	<180 M	<180 M	<180 M
Toluene	<7 µg/kg	TM116		<140 M	<140 M	<140 M	<140 M	<140 M	<140 M
Ethylbenzene	<4 µg/kg	TM116		<80 M	<80 M	<80 M	<80 M	<80 M	<80 M
p/m-Xylene	<10 µg/kg	TM116		<200 #	<200 #	<200 #	<200 #	<200 #	<200 #
o-Xylene	<10 µg/kg	TM116		<200 M	<200 M	<200 M	<200 M	<200 M	<200 M
Naphthalene	<13 µg/kg	TM116		<260 M	<260 M	<260 M	<260 M	<260 M	<260 M
Sum of Detected Xylenes	<0.02 mg/kg	TM116		<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Sum of BTEX	<40 µg/kg	TM116		<800	<800	<800	<800	<800	<800

CERTIFICATE OF ANALYSIS

SDG:	210213-65	**Client Reference:**	P18-669	**Report Number:**	588856
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	588583

VOC MS (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	SPLF-15	SPLF-16	SPLF-17	SPLF-18	SPLF-19	SPLF-20
			Depth (m)	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	12/02/2021	12/02/2021	12/02/2021	12/02/2021	12/02/2021	12/02/2021
			Sample Time	.	.	.	.	.	.
			Date Received	13/02/2021	13/02/2021	13/02/2021	13/02/2021	13/02/2021	13/02/2021
			SDG Ref	210213-65	210213-65	210213-65	210213-65	210213-65	210213-65
			Lab Sample No.(s)	23722584	23722589	23722594	23722598	23722604	23722608
			AGS Reference						
Dibromofluoromethane**	%	TM116		113	104	105	109	117	105
Toluene-d8**	%	TM116		98.7	97.4	98.9	98.8	101	97.3
4-Bromofluorobenzene**	%	TM116		87.8	92.3	96	92.6	95.5	93.6
Methyl Tertiary Butyl Ether	<10 µg/kg	TM116		<200 M	<200 M	<200 M	<200 M	<200 M	<200 M
Benzene	<9 µg/kg	TM116		<180 M	<180 M	<180 M	<180 M	<180 M	<180 M
Toluene	<7 µg/kg	TM116		<140 M	<140 M	<140 M	<140 M	<140 M	<140 M
Ethylbenzene	<4 µg/kg	TM116		<80 M	<80 M	<80 M	<80 M	<80 M	<80 M
p/m-Xylene	<10 µg/kg	TM116		<200 #	<200 #	<200 #	<200 #	<200 #	<200 #
o-Xylene	<10 µg/kg	TM116		<200 M	<200 M	<200 M	<200 M	<200 M	<200 M
Naphthalene	<13 µg/kg	TM116		<260 M	<260 M	<260 M	<260 M	<260 M	<260 M
Sum of Detected Xylenes	<0.02 mg/kg	TM116		<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Sum of BTEX	<40 µg/kg	TM116		<800	<800	<800	<800	<800	<800

CERTIFICATE OF ANALYSIS

SDG:	210213-65	**Client Reference:**	P18-669	**Report Number:**	588856
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	588583

VOC MS (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	SPLF-21	SPLF-22	W127-1	W127-2	W127-3	W127-4
			Depth (m)	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	12/02/2021	12/02/2021	11/02/2021	11/02/2021	11/02/2021	11/02/2021
			Sample Time	.	.	.	.	.	.
			Date Received	13/02/2021	13/02/2021	13/02/2021	13/02/2021	13/02/2021	13/02/2021
			SDG Ref	210213-65	210213-65	210213-65	210213-65	210213-65	210213-65
			Lab Sample No.(s)	23722613	23722618	23722627	23722631	23722635	23722639
			AGS Reference						
Dibromofluoromethane**	%	TM116		116	105	96.1	113	102	112
Toluene-d8**	%	TM116		100	98.3	93.1	99.5	96.8	98.6
4-Bromofluorobenzene**	%	TM116		96.1	99.3	80.2	87.3	88	88.6
Methyl Tertiary Butyl Ether	<10 µg/kg	TM116		<200 M	<200 M	<200 M	<200 M	<200 M	<200 M
Benzene	<9 µg/kg	TM116		<180 M	<180 M	<180 M	<180 M	<180 M	<180 M
Toluene	<7 µg/kg	TM116		<140 M	<140 M	<140 M	<140 M	<140 M	<140 M
Ethylbenzene	<4 µg/kg	TM116		<80 M	<80 M	<80 M	<80 M	<80 M	<80 M
p/m-Xylene	<10 µg/kg	TM116		<200 #	<200 #	<200 #	<200 #	<200 #	<200 #
o-Xylene	<10 µg/kg	TM116		<200 M	<200 M	<200 M	<200 M	<200 M	<200 M
Naphthalene	<13 µg/kg	TM116		<260 M	<260 M	<260 M	<260 M	<260 M	<260 M
Sum of Detected Xylenes	<0.02 mg/kg	TM116		<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Sum of BTEX	<40 µg/kg	TM116		<800	<800	<800	<800	<800	<800

Validated

CERTIFICATE OF ANALYSIS

SDG:	210213-65	**Client Reference:**	P18-669	**Report Number:**	588856
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	588583

VOC MS (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	W127-5	W127-6	W210-1	W210-2	W210-3	W211-1
			Depth (m)	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	11/02/2021	11/02/2021	11/02/2021	11/02/2021	11/02/2021	11/02/2021
			Sample Time	.	.	.	.	.	.
			Date Received	13/02/2021	13/02/2021	13/02/2021	13/02/2021	13/02/2021	13/02/2021
			SDG Ref	210213-65	210213-65	210213-65	210213-65	210213-65	210213-65
			Lab Sample No.(s)	23722644	23722441	23722445	23722449	23722454	23722458
			AGS Reference						
Dibromofluoromethane**	%	TM116		104	109	101	118	104	122
Toluene-d8**	%	TM116		97.6	98	96	99.7	95.7	98.7
4-Bromofluorobenzene**	%	TM116		95.4	88.5	89.4	91.2	90.2	94
Methyl Tertiary Butyl Ether	<10 µg/kg	TM116		<200 M	<200 M	<200 M	<200 M	<200 M	<200 M
Benzene	<9 µg/kg	TM116		<180 M	<180 M	<180 M	<180 M	<180 M	<180 M
Toluene	<7 µg/kg	TM116		<140 M	<140 M	<140 M	<140 M	<140 M	<140 M
Ethylbenzene	<4 µg/kg	TM116		<80 M	<80 M	<80 M	<80 M	<80 M	<80 M
p/m-Xylene	<10 µg/kg	TM116		<200 #	<200 #	<200 #	<200 #	<200 #	<200 #
o-Xylene	<10 µg/kg	TM116		<200 M	<200 M	<200 M	<200 M	<200 M	<200 M
Naphthalene	<13 µg/kg	TM116		<260 M	<260 M	<260 M	<260 M	<260 M	<260 M
Sum of Detected Xylenes	<0.02 mg/kg	TM116		<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Sum of BTEX	<40 µg/kg	TM116		<800	<800	<800	<800	<800	<800

CERTIFICATE OF ANALYSIS

SDG:	210213-65	**Client Reference:**	P18-669	**Report Number:**	588856
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	588583

VOC MS (S)

Results Legend	
#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	W211-2	W211-3	W211-4			
			Depth (m)	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20			
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)			
			Date Sampled	11/02/2021	11/02/2021	11/02/2021			
			Sample Time	.	.	.			
			Date Received	13/02/2021	13/02/2021	13/02/2021			
			SDG Ref	210213-65	210213-65	210213-65			
			Lab Sample No.(s)	23722462	23722466	23722473			
			AGS Reference						
Dibromofluoromethane**	%	TM116		103	105	105			
Toluene-d8**	%	TM116		97.4	96.7	99			
4-Bromofluorobenzene**	%	TM116		93.9	96.2	94.9			
Methyl Tertiary Butyl Ether	<10 µg/kg	TM116		<200 M	<200 M	<200 M			
Benzene	<9 µg/kg	TM116		<180 M	<180 M	<180 M			
Toluene	<7 µg/kg	TM116		<140 M	<140 M	<140 M			
Ethylbenzene	<4 µg/kg	TM116		<80 M	<80 M	<80 M			
p/m-Xylene	<10 µg/kg	TM116		<200 #	<200 #	<200 #			
o-Xylene	<10 µg/kg	TM116		<200 M	<200 M	<200 M			
Naphthalene	<13 µg/kg	TM116		<260 M	<260 M	<260 M			
Sum of Detected Xylenes	<0.02 mg/kg	TM116		<0.4	<0.4	<0.4			
Sum of BTEX	<40 µg/kg	TM116		<800	<800	<800			

CERTIFICATE OF ANALYSIS

SDG:	210213-65	**Client Reference:**	P18-669	**Report Number:**	588856
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	588583

Asbestos Identification - Solid Samples

Results Legend

#	ISO17025 accredited.
M	*m*CERTS accredited.
*	Subcontracted test.
(F)	Trigger breach confirmed
1-5&+$@	Sample deviation (see appendix)

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthophyllite	Fibrous Tremolite	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	SPAN-1 0.20 - 0.20 SOLID 11/02/2021 00:00:00 13/02/2021 05:00:00 210213-65 23722437 TM048	22/02/2021	Paul Poynton	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	SPAN-3 0.20 - 0.20 SOLID 11/02/2021 00:00:00 13/02/2021 05:00:00 210213-65 23722565 TM048	22/02/2021	Agnieszka Chelmowska	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	SPLF-2 0.20 - 0.20 SOLID 12/02/2021 00:00:00 13/02/2021 05:00:00 210213-65 23722481 TM048	22/02/2021	James Richards	Fibre bundles in soil	Not Detected (#)	Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	SPLF-4 0.20 - 0.20 SOLID 12/02/2021 00:00:00 13/02/2021 05:00:00 210213-65 23722493 TM048	22/02/2021	Marcin Magdziarek	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	SPLF-6 0.20 - 0.20 SOLID 12/02/2021 00:00:00 13/02/2021 05:00:00 210213-65 23722507 TM048	22/02/2021	Paul Poynton	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	SPLF-8 0.20 - 0.20 SOLID 12/02/2021 00:00:00 13/02/2021 05:00:00 210213-65 23722524 TM048	22/02/2021	Marcin Magdziarek	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	SPLF-10 0.20 - 0.20 SOLID 12/02/2021 00:00:00 13/02/2021 05:00:00 210213-65 23722541 TM048	22/02/2021	James Richards	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	SPLF-12 0.20 - 0.20 SOLID 12/02/2021 00:00:00 13/02/2021 05:00:00 210213-65 23722559 TM048	22/02/2021	Paul Poynton	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected

Validated

CERTIFICATE OF ANALYSIS

SDG: 210213-65 **Client Reference:** P18-669 **Report Number:** 588856
Location: Llanwern **Order Number:** 108282 **Superseded Report:** 588583

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthophyllite	Fibrous Tremolite	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	SPLF-14 0.20 - 0.20 SOLID 12/02/2021 00:00:00 13/02/2021 05:00:00 210213-65 23722580 TM048	22/02/2021	Paul Poynton	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	SPLF-16 0.20 - 0.20 SOLID 12/02/2021 00:00:00 13/02/2021 05:00:00 210213-65 23722589 TM048	22/02/2021	Agnieszka Chelmowska	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	SPLF-18 0.20 - 0.20 SOLID 12/02/2021 00:00:00 13/02/2021 05:00:00 210213-65 23722598 TM048	22/02/2021	James Richards	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	SPLF-20 0.20 - 0.20 SOLID 12/02/2021 00:00:00 13/02/2021 05:00:00 210213-65 23722608 TM048	22/02/2021	Agnieszka Chelmowska	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	SPLF-22 0.20 - 0.20 SOLID 12/02/2021 00:00:00 13/02/2021 05:00:00 210213-65 23722618 TM048	22/02/2021	Agnieszka Chelmowska	Loose fibres in soil	Not Detected (#)	Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	W127-1 0.20 - 0.20 SOLID 11/02/2021 00:00:00 13/02/2021 05:00:00 210213-65 23722627 TM048	22/02/2021	Paul Poynton	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	W127-3 0.20 - 0.20 SOLID 11/02/2021 00:00:00 13/02/2021 05:00:00 210213-65 23722635 TM048	24/02/2021	Barbara Urbanek-Walsh	Loose fibres in soil.	Not Detected (#)	Trace (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	W127-5 0.20 - 0.20 SOLID 11/02/2021 00:00:00 13/02/2021 05:00:00 210213-65 23722644 TM048	22/02/2021	Agnieszka Chelmowska	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	W210-1 0.20 - 0.20 SOLID 11/02/2021 00:00:00 13/02/2021 05:00:00 210213-65 23722445 TM048	22/02/2021	James Richards	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected

Validated

CERTIFICATE OF ANALYSIS

SDG:	210213-65	**Client Reference:**	P18-669	**Report Number:**	588856
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	588583

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthophyllite	Fibrous Tremolite	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	W210-3 0.20 - 0.20 SOLID 11/02/2021 00:00:00 13/02/2021 05:00:00 210213-65 23722454 TM048	22/02/2021	Paul Poynton	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	W211-2 0.20 - 0.20 SOLID 11/02/2021 00:00:00 13/02/2021 05:00:00 210213-65 23722462 TM048	22/02/2021	Paul Poynton	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	W211-4 0.20 - 0.20 SOLID 11/02/2021 00:00:00 13/02/2021 05:00:00 210213-65 23722473 TM048	22/02/2021	James Richards	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected

CERTIFICATE OF ANALYSIS

SDG:	210213-65	**Client Reference:**	P18-669	**Report Number:**	588856
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	588583

Asbestos Quantification - Full

Results Legend

#	ISO17025 accredited.
M	*m*CERTS accredited.
*	Subcontracted test.
(F)	Trigger breach confirmed
1-5&♦§@	Sample deviation (see appendix)

		Additional Asbestos Components	Analysts Comments	Asbestos Quantification - Gravimetric - %	Asbestos Quantification - PCOM	Asbestos Quantification - Total - %
Cust. Sample Ref.	SPLF-2	None (#)	-	<0.001 (#)	<0.001 (#)	<0.001 (#)
Depth (m)	0.20 - 0.20					
Sample Type	SOLID					
Date Sampled	12/02/2021 00:00:00					
Date Received	13/02/2021 05:00:00					
SDG	210213-65					
Original Sample	23722481					
Method Number	TM304					
Cust. Sample Ref.	SPLF-22	None (#)	N/A	<0.001 (#)	<0.001 (#)	<0.001 (#)
Depth (m)	0.20 - 0.20					
Sample Type	SOLID					
Date Sampled	12/02/2021 00:00:00					
Date Received	13/02/2021 05:00:00					
SDG	210213-65					
Original Sample	23722618					
Method Number	TM304					
Cust. Sample Ref.	W127-3	None (#)	-	<0.001 (#)	<0.001 (#)	<0.001 (#)
Depth (m)	0.20 - 0.20					
Sample Type	SOLID					
Date Sampled	11/02/2021 00:00:00					
Date Received	13/02/2021 05:00:00					
SDG	210213-65					
Original Sample	23722635					
Method Number	TM304					

Table of Results - Appendix

Method No	Reference	Description
PM024	Modified BS 1377	Soil preparation including homogenisation, moisture screens of soils for Asbestos Containing Material
TM024	Method 4500A & B, AWWA/APHA, 20th Ed., 1999	Determination of Exchangeable Ammonium and Ammoniacal Nitrogen as N by titration on solids
TM048	HSG 248, Asbestos: The analysts' guide for sampling, analysis and clearance procedures	Identification of Asbestos in Bulk Material
TM062 (S)	National Grid Property Holdings Methods for the Collection & Analysis of Samples from National Grid Sites version 1 Sec 3.9	Determination of Phenols in Soils by HPLC
TM089	Modified: US EPA Methods 8020 & 602	Determination of Gasoline Range Hydrocarbons (GRO) by Headspace GC-FID (C4-C12)
TM116	Modified: US EPA Method 8260, 8120, 8020, 624, 610 & 602	Determination of Volatile Organic Compounds by Headspace / GC-MS
TM132	In - house Method	ELTRA CS800 Operators Guide
TM133	BS 1377: Part 3 1990;BS 6068-2.5	Determination of pH in Soil and Water using the GLpH pH Meter
TM153	Method 4500A,B,C, I, M AWWA/APHA, 20th Ed., 1999	Determination of Total Cyanide, Free (Easily Liberatable) Cyanide and Thiocyanate using the Skalar SANS+ System Segmented Flow Analyser
TM181	US EPA Method 6010B	Determination of Routine Metals in Soil by iCap 6500 Duo ICP-OES
TM218	Shaker extraction - EPA method 3546.	The determination of PAH in soil samples by GC-MS
TM304	HSE Contract research Report no 83/1996	Asbestos Quantification in Soil: Fibres identified by morphology only
TM414	Analysis of Petroleum Hydrocarbons in Environmental Media – Total Petroleum Hydrocarbon Criteria	Determination of Speciated Extractable Petroleum Hydrocarbons in Soils by GCxGC-FID

NA = not applicable.

Chemical testing (unless subcontracted) performed at ALS Life Sciences Ltd Hawarden (Method codes TM) or ALS Life Sciences Ltd Aberdeen (Method codes S).

CERTIFICATE OF ANALYSIS

SDG:	210213-65	**Client Reference:**	P18-669	**Report Number:**	588856
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	588583

Test Completion Dates

Lab Sample No(s)	23722437	23722485	23722565	23722622	23722477	23722481	23722489	23722493	23722500	23722507
Customer Sample Ref.	SPAN-1	SPAN-2	SPAN-3	SPAN-4	SPLF-1	SPLF-2	SPLF-3	SPLF-4	SPLF-5	SPLF-6
AGS Ref.										
Depth	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
Ammonium Soil by Titration	22-Feb-2021	22-Feb-2021	22-Feb-2021	22-Feb-2021	22-Feb-2021	22-Feb-2021	22-Feb-2021	22-Feb-2021	22-Feb-2021	22-Feb-2021
Asbestos ID in Solid Samples	22-Feb-2021		22-Feb-2021			22-Feb-2021		22-Feb-2021		22-Feb-2021
Asbestos Quantification - Full						01-Mar-2021				
Cyanide Comp/Free/Total/Thiocyanate	19-Feb-2021	19-Feb-2021	19-Feb-2021	22-Feb-2021	22-Feb-2021	22-Feb-2021	22-Feb-2021	22-Feb-2021	19-Feb-2021	19-Feb-2021
EPH CWG GC (S)	18-Feb-2021	18-Feb-2021	18-Feb-2021	17-Feb-2021	17-Feb-2021	18-Feb-2021	18-Feb-2021	17-Feb-2021	17-Feb-2021	17-Feb-2021
GRO by GC-FID (S)	19-Feb-2021	19-Feb-2021	19-Feb-2021	19-Feb-2021	21-Feb-2021	19-Feb-2021	22-Feb-2021	19-Feb-2021	21-Feb-2021	22-Feb-2021
Metals in solid samples by OES	23-Feb-2021	25-Feb-2021	24-Feb-2021	25-Feb-2021	23-Feb-2021	22-Feb-2021	25-Feb-2021	23-Feb-2021	25-Feb-2021	23-Feb-2021
PAH by GCMS	22-Feb-2021	22-Feb-2021	22-Feb-2021	22-Feb-2021	19-Feb-2021	22-Feb-2021	22-Feb-2021	22-Feb-2021	22-Feb-2021	19-Feb-2021
pH	17-Feb-2021	16-Feb-2021	17-Feb-2021	16-Feb-2021	16-Feb-2021	17-Feb-2021	16-Feb-2021	18-Feb-2021	16-Feb-2021	17-Feb-2021
Phenols by HPLC (S)	18-Feb-2021	18-Feb-2021	18-Feb-2021	18-Feb-2021	18-Feb-2021	18-Feb-2021	19-Feb-2021	19-Feb-2021	18-Feb-2021	19-Feb-2021
Sample description	15-Feb-2021	15-Feb-2021	15-Feb-2021	15-Feb-2021	15-Feb-2021	15-Feb-2021	15-Feb-2021	15-Feb-2021	15-Feb-2021	15-Feb-2021
Total Organic Carbon	22-Feb-2021	19-Feb-2021	22-Feb-2021	19-Feb-2021	19-Feb-2021	22-Feb-2021	19-Feb-2021	22-Feb-2021	19-Feb-2021	22-Feb-2021
TPH CWG GC (S)	19-Feb-2021	19-Feb-2021	19-Feb-2021	19-Feb-2021	21-Feb-2021	19-Feb-2021	22-Feb-2021	19-Feb-2021	21-Feb-2021	22-Feb-2021
VOC MS (S)	19-Feb-2021	19-Feb-2021	19-Feb-2021	19-Feb-2021	19-Feb-2021	19-Feb-2021	19-Feb-2021	19-Feb-2021	19-Feb-2021	19-Feb-2021

Lab Sample No(s)	23722517	23722524	23722532	23722541	23722551	23722559	23722572	23722580	23722584	23722589
Customer Sample Ref.	SPLF-7	SPLF-8	SPLF-9	SPLF-10	SPLF-11	SPLF-12	SPLF-13	SPLF-14	SPLF-15	SPLF-16
AGS Ref.										
Depth	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
Ammonium Soil by Titration	22-Feb-2021	22-Feb-2021	22-Feb-2021	22-Feb-2021	22-Feb-2021	22-Feb-2021	22-Feb-2021	22-Feb-2021	22-Feb-2021	22-Feb-2021
Asbestos ID in Solid Samples		22-Feb-2021		22-Feb-2021		22-Feb-2021		22-Feb-2021		22-Feb-2021
Cyanide Comp/Free/Total/Thiocyanate	19-Feb-2021	19-Feb-2021	22-Feb-2021	18-Feb-2021	22-Feb-2021	19-Feb-2021	22-Feb-2021	22-Feb-2021	19-Feb-2021	19-Feb-2021
EPH CWG GC (S)	17-Feb-2021	18-Feb-2021	18-Feb-2021	17-Feb-2021	18-Feb-2021	18-Feb-2021	18-Feb-2021	18-Feb-2021	17-Feb-2021	18-Feb-2021
GRO by GC-FID (S)	21-Feb-2021	19-Feb-2021	21-Feb-2021	22-Feb-2021	21-Feb-2021	19-Feb-2021	21-Feb-2021	19-Feb-2021	21-Feb-2021	19-Feb-2021
Metals in solid samples by OES	23-Feb-2021	23-Feb-2021	23-Feb-2021	23-Feb-2021	25-Feb-2021	23-Feb-2021	25-Feb-2021	23-Feb-2021	25-Feb-2021	23-Feb-2021
PAH by GCMS	19-Feb-2021	22-Feb-2021	22-Feb-2021	19-Feb-2021	22-Feb-2021	22-Feb-2021	22-Feb-2021	19-Feb-2021	22-Feb-2021	19-Feb-2021
pH	16-Feb-2021	17-Feb-2021	16-Feb-2021	17-Feb-2021	16-Feb-2021	17-Feb-2021	16-Feb-2021	18-Feb-2021	16-Feb-2021	17-Feb-2021
Phenols by HPLC (S)	18-Feb-2021	18-Feb-2021	18-Feb-2021	19-Feb-2021	19-Feb-2021	19-Feb-2021	18-Feb-2021	19-Feb-2021	18-Feb-2021	19-Feb-2021
Sample description	15-Feb-2021	15-Feb-2021	15-Feb-2021	15-Feb-2021	15-Feb-2021	15-Feb-2021	15-Feb-2021	15-Feb-2021	15-Feb-2021	15-Feb-2021
Total Organic Carbon	19-Feb-2021	22-Feb-2021	19-Feb-2021	22-Feb-2021	19-Feb-2021	22-Feb-2021	19-Feb-2021	22-Feb-2021	19-Feb-2021	22-Feb-2021
TPH CWG GC (S)	21-Feb-2021	19-Feb-2021	21-Feb-2021	22-Feb-2021	21-Feb-2021	19-Feb-2021	21-Feb-2021	19-Feb-2021	21-Feb-2021	19-Feb-2021
VOC MS (S)	19-Feb-2021	19-Feb-2021	19-Feb-2021	19-Feb-2021	19-Feb-2021	19-Feb-2021	19-Feb-2021	19-Feb-2021	19-Feb-2021	19-Feb-2021

Lab Sample No(s)	23722594	23722598	23722604	23722608	23722613	23722618	23722627	23722631	23722635	23722639
Customer Sample Ref.	SPLF-17	SPLF-18	SPLF-19	SPLF-20	SPLF-21	SPLF-22	W127-1	W127-2	W127-3	W127-4
AGS Ref.										
Depth	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
Ammonium Soil by Titration	22-Feb-2021	22-Feb-2021	22-Feb-2021	22-Feb-2021	22-Feb-2021	22-Feb-2021	22-Feb-2021	22-Feb-2021	22-Feb-2021	22-Feb-2021
Asbestos ID in Solid Samples		22-Feb-2021		22-Feb-2021		22-Feb-2021	22-Feb-2021		24-Feb-2021	
Asbestos Quantification - Full						26-Feb-2021			02-Mar-2021	
Cyanide Comp/Free/Total/Thiocyanate	22-Feb-2021	22-Feb-2021	19-Feb-2021	22-Feb-2021	19-Feb-2021	19-Feb-2021	19-Feb-2021	19-Feb-2021	22-Feb-2021	19-Feb-2021
EPH CWG GC (S)	17-Feb-2021	18-Feb-2021	18-Feb-2021	17-Feb-2021	19-Feb-2021	18-Feb-2021	17-Feb-2021	18-Feb-2021	17-Feb-2021	18-Feb-2021
GRO by GC-FID (S)	22-Feb-2021	19-Feb-2021	21-Feb-2021	22-Feb-2021	19-Feb-2021	19-Feb-2021	22-Feb-2021	22-Feb-2021	22-Feb-2021	22-Feb-2021
Metals in solid samples by OES	23-Feb-2021	23-Feb-2021	23-Feb-2021	23-Feb-2021	23-Feb-2021	23-Feb-2021	23-Feb-2021	25-Feb-2021	23-Feb-2021	25-Feb-2021
PAH by GCMS	19-Feb-2021	19-Feb-2021	22-Feb-2021	22-Feb-2021	19-Feb-2021	22-Feb-2021	23-Feb-2021	23-Feb-2021	23-Feb-2021	23-Feb-2021
pH	17-Feb-2021	17-Feb-2021	16-Feb-2021	17-Feb-2021	16-Feb-2021	17-Feb-2021	17-Feb-2021	16-Feb-2021	17-Feb-2021	16-Feb-2021
Phenols by HPLC (S)	19-Feb-2021	19-Feb-2021	18-Feb-2021	18-Feb-2021	19-Feb-2021	18-Feb-2021	18-Feb-2021	18-Feb-2021	18-Feb-2021	18-Feb-2021
Sample description	15-Feb-2021	15-Feb-2021	15-Feb-2021	15-Feb-2021	15-Feb-2021	15-Feb-2021	15-Feb-2021	15-Feb-2021	15-Feb-2021	15-Feb-2021
Total Organic Carbon	22-Feb-2021	22-Feb-2021	19-Feb-2021	22-Feb-2021	19-Feb-2021	22-Feb-2021	22-Feb-2021	19-Feb-2021	22-Feb-2021	19-Feb-2021
TPH CWG GC (S)	22-Feb-2021	19-Feb-2021	21-Feb-2021	22-Feb-2021	19-Feb-2021	19-Feb-2021	22-Feb-2021	22-Feb-2021	22-Feb-2021	22-Feb-2021
VOC MS (S)	19-Feb-2021	19-Feb-2021	19-Feb-2021	19-Feb-2021	18-Feb-2021	19-Feb-2021	19-Feb-2021	19-Feb-2021	19-Feb-2021	19-Feb-2021

Validated

CERTIFICATE OF ANALYSIS

SDG:	210213-65	**Client Reference:**	P18-669	**Report Number:**	588856
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	588583

Lab Sample No(s)	23722644	23722441	23722445	23722449	23722454	23722458	23722462	23722466	23722473
Customer Sample Ref.	W127-5	W127-6	W210-1	W210-2	W210-3	W211-1	W211-2	W211-3	W211-4
AGS Ref.									
Depth	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
Ammonium Soil by Titration	22-Feb-2021	22-Feb-2021	22-Feb-2021	22-Feb-2021	22-Feb-2021	22-Feb-2021	22-Feb-2021	22-Feb-2021	22-Feb-2021
Asbestos ID in Solid Samples	22-Feb-2021		22-Feb-2021		22-Feb-2021		22-Feb-2021		22-Feb-2021
Cyanide Comp/Free/Total/Thiocyanate	22-Feb-2021	22-Feb-2021	19-Feb-2021	19-Feb-2021	19-Feb-2021	19-Feb-2021	19-Feb-2021	19-Feb-2021	19-Feb-2021
EPH CWG GC (S)	17-Feb-2021	17-Feb-2021	18-Feb-2021	17-Feb-2021	17-Feb-2021	17-Feb-2021	18-Feb-2021	17-Feb-2021	17-Feb-2021
GRO by GC-FID (S)	22-Feb-2021	21-Feb-2021	19-Feb-2021	21-Feb-2021	19-Feb-2021	21-Feb-2021	19-Feb-2021	19-Feb-2021	19-Feb-2021
Metals in solid samples by OES	23-Feb-2021	25-Feb-2021	23-Feb-2021	25-Feb-2021	23-Feb-2021	25-Feb-2021	23-Feb-2021	22-Feb-2021	23-Feb-2021
PAH by GCMS	23-Feb-2021	23-Feb-2021	19-Feb-2021	19-Feb-2021	22-Feb-2021	22-Feb-2021	22-Feb-2021	22-Feb-2021	22-Feb-2021
pH	17-Feb-2021	16-Feb-2021	18-Feb-2021	16-Feb-2021	17-Feb-2021	16-Feb-2021	18-Feb-2021	16-Feb-2021	17-Feb-2021
Phenols by HPLC (S)	19-Feb-2021	18-Feb-2021	18-Feb-2021	19-Feb-2021	19-Feb-2021	18-Feb-2021	19-Feb-2021	18-Feb-2021	19-Feb-2021
Sample description	15-Feb-2021	15-Feb-2021	15-Feb-2021	15-Feb-2021	15-Feb-2021	15-Feb-2021	15-Feb-2021	15-Feb-2021	15-Feb-2021
Total Organic Carbon	22-Feb-2021	19-Feb-2021	22-Feb-2021	19-Feb-2021	19-Feb-2021	19-Feb-2021	19-Feb-2021	19-Feb-2021	22-Feb-2021
TPH CWG GC (S)	22-Feb-2021	21-Feb-2021	19-Feb-2021	21-Feb-2021	19-Feb-2021	21-Feb-2021	19-Feb-2021	19-Feb-2021	19-Feb-2021
VOC MS (S)	19-Feb-2021	19-Feb-2021	19-Feb-2021	19-Feb-2021	19-Feb-2021	19-Feb-2021	19-Feb-2021	19-Feb-2021	19-Feb-2021

Appendix General

1. Results are expressed on a dry weight basis (dried at 35ºC) for all soil analyses except for the following: NRA and CEN Leach tests, flash point LOI, pH, ammonium as NH4 by the BRE method, VOC TICs and SVOC TICs.

2. If sufficient sample is received a sub sample will be retained free of charge for 30 days after analysis is completed (e-mailed) for all sample types unless the sample is destroyed on testing. The prepared soil sub sample that is analysed for asbestos will be retained for a period of 6 months after the analysis date. All bulk samples will be retained for a period of 6 months after the analysis date. All samples received and not scheduled will be disposed of one month after the date of receipt unless we are instructed to the contrary. Once the initial period has expired, a storage charge will be applied for each month or part thereof until the client cancels the request for sample storage. ALS reserve the right to charge for samples received and stored but not analysed.

3. With respect to turnaround, we will always endeavour to meet client requirements wherever possible, but turnaround times cannot be absolutely guaranteed due to so many variables beyond our control.

4. We take responsibility for any test performed by sub-contractors (marked with an asterisk). We endeavour to use UKAS/MCERTS Accredited Laboratories, who either complete a quality questionnaire or are audited by ourselves. For some determinands there are no UKAS/MCERTS Accredited Laboratories, in this instance a laboratory with a known track record will be utilised.

5. If no separate volatile sample is supplied by the client, or if a headspace or sediment is present in the volatile sample, the integrity of the data may be compromised. This will be flagged up as an invalid VOC on the test schedule and the result marked as deviating on the test certificate.

6. NDP - No determination possible due to insufficient/unsuitable sample.

7. Results relate only to the items tested.

8. LoDs (Limit of Detection) for wet tests reported on a dry weight basis are not corrected for moisture content.

9. **Surrogate recoveries** - Surrogates are added to your sample to monitor recovery of the test requested. A % recovery is reported, results are not corrected for the recovery measured. Typical recoveries for organics tests are 70-130%. Recoveries in soils are affected by organic rich or clay rich matrices. Waters can be affected by remediation fluids or high amounts of sediment. Test results are only ever reported if all of the associated quality checks pass; it is assumed that all recoveries outside of the values above are due to matrix affect.

10. Stones/debris are not routinely removed. We always endeavour to take a representative sub sample from the received sample.

11. In certain circumstances the method detection limit may be elevated due to the sample being outside the calibration range. Other factors that may contribute to this include possible interferences. In both cases the sample would be diluted which would cause the method detection limit to be raised.

12. Mercury results quoted on soils will not include volatile mercury as the analysis is performed on a dried and crushed sample.

13. For leachate preparations other than Zero Headspace Extraction (ZHE) volatile loss may occur.

14. For the BSEN 12457-3 two batch process to allow the cumulative release to be calculated, the volume of the leachate produced is measured and filtered for all tests. We therefore cannot carry out any unfiltered analysis. The tests affected include volatiles GCFID/GCMS and all subcontracted analysis.

15. Analysis and identification of specific compounds using GCFID is by retention time only, and we routinely calibrate and quantify for benzene, toluene, ethylbenzenes and xylenes (BTEX). For total volatiles in the C5-C12 range, the total area of the chromatogram is integrated and expressed as ug/kg or ug/l. Although this analysis is commonly used for the quantification of gasoline range organics (GRO), the system will also detect other compounds such as chlorinated solvents, and this may lead to a falsely high result with respect to hydrocarbons only. It is not possible to specifically identify these non-hydrocarbons, as standards are not routinely run for any other compounds, and for more definitive identification, volatiles by GCMS should be utilised.

16. We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample. Other coarse granular material such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

17. **Tentatively Identified Compounds (TICs)** are non-target peaks in VOC and SVOC analysis. All non-target peaks detected with a concentration above the LoD are subjected to a mass spectral library search. Non-target peaks with a library search confidence of >75% are reported based on the best mass spectral library match. When a non-target peak with a library search confidence of <75% is detected it is reported as "mixed hydrocarbons". Non-target compounds identified from the scan data are semi-quantified relative to one of the deuterated internal standards, under the same chromatographic conditions as the target compounds. This result is reported as a semi-quantitative value and reported as Tentatively Identified Compounds (TICs). TICs are outside the scope of UKAS accreditation and are not moisture corrected.

18. **Sample Deviations**

If a sample is classed as deviated then the associated results may be compromised.

1	**Container with Headspace provided for volatiles analysis**
2	**Incorrect container received**
3	**Deviation from method**
4	**Matrix interference**
♦	**Sample holding time exceeded in laboratory**
@	**Sample holding time exceeded due to late arrival of instructions or samples**
§	**Sampled on date not provided**

19. **Asbestos**

When requested, the individual sub sample scheduled will be analysed in house for the presence of asbestos fibres and asbestos containing material by our documented in house method TM048 based on HSG 248 (2005), which is accredited to ISO17025. If a specific asbestos fibre type is not found this will be reported as "Not detected". If no asbestos fibre types are found all will be reported as "Not detected" and the sub sample analysed deemed to be clear of asbestos. If an asbestos fibre type is found it will be reported as detected (for each fibre type found). Testing can be carried out on asbestos positive samples, but, due to Health and Safety considerations, may be replaced by alternative tests or reported as No Determination Possible (NDP). The quantity of asbestos present is not determined unless specifically requested.

Identification of Asbestos in Bulk Materials & Soils

The results for identification of asbestos in bulk materials are obtained from supplied bulk materials which have been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

The results for identification of asbestos in soils are obtained from a homogenised sub sample which has been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

Asbestos Type	Common Name
Chrysotile	White Asbestos
Amosite	Brown Asbestos
Crocidolite	Blue Asbestos
Fibrous Actinolite	-
Fibrous Anthophyllite	-
Fibrous Tremolite	-

Visual Estimation Of Fibre Content

Estimation of fibre content is not permitted as part of our UKAS accredited test other than: - Trace - Where only one or two asbestos fibres were identified.

Respirable Fibres

Respirable fibres are defined as fibres of <3 µm diameter, longer than 5 µm and with aspect ratios of at least 3:1 that can be inhaled into the lower regions of the lung and are generally acknowledged to be most important predictor of hazard and risk for cancers of the lung.
Standing Committee of Analysts, *The Quantification of Asbestos in Soil (2017).*

Further guidance on typical asbestos fibre content of manufactured products can be found in HSG 264.

The identification of asbestos containing materials and soils falls within our schedule of tests for which we hold UKAS accreditation, however opinions, interpretations and all other information contained in the report are outside the scope of UKAS accreditation.

Unit 7-8 Hawarden Business Park
Manor Road (off Manor Lane)
Hawarden
Deeside
CH5 3US
Tel: (01244) 528700
Fax: (01244) 528701
email: hawardencustomerservices@alsglobal.com
Website: www.alsenvironmental.co.uk

Rodgers Leask
Office 225
2430/2440
Aztec West
Almondsbury
Bristol
BS32 4QA

Attention: Elliot Thomas

CERTIFICATE OF ANALYSIS

Date of report Generation:	01 March 2021
Customer:	Rodgers Leask
Sample Delivery Group (SDG):	210216-60
Your Reference:	P18-669
Location:	Llanwern
Report No:	588744

This report has been revised and directly supersedes 588425 in its entirety.

We received 24 samples on Tuesday February 16, 2021 and 24 of these samples were scheduled for analysis which was completed on Monday March 01, 2021. Accredited laboratory tests are defined within the report, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation.

Should this report require incorporation into client reports, it must be used in its entirety and not simply with the data sections alone.

Chemical testing (unless subcontracted) performed at ALS Life Sciences Ltd Hawarden (Method codes TM) or ALS Life Sciences Ltd Aberdeen (Method codes S).

All sample data is provided by the customer. The reported results relate to the sample supplied, and on the basis that this data is correct.
Incorrect sampling dates and/or sample information will affect the validity of results.
The customer is not permitted to reproduce this report except in full without the approval of the laboratory.

Approved By:

Sonia McWhan

Operations Manager

CERTIFICATE OF ANALYSIS

SDG:	210216-60	**Client Reference:**	P18-669	**Report Number:**	588744
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	588425

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
23732928	SPIX-1		0.20 - 0.20	15/02/2021
23732934	SPIX-2		0.20 - 0.20	15/02/2021
23732940	SPIX-3		0.20 - 0.20	15/02/2021
23732922	W104-1		0.20 - 0.20	15/02/2021
23732766	W125-1		0.20 - 0.20	15/02/2021
23732878	W125-2		0.20 - 0.20	15/02/2021
23732945	W204-1		0.20 - 0.20	15/02/2021
23732951	W204-2		0.20 - 0.20	15/02/2021
23732960	W204-3		0.20 - 0.20	15/02/2021
23732779	W204-4		0.20 - 0.20	15/02/2021
23732793	W204-5		0.20 - 0.20	15/02/2021
23732810	W204-6		0.20 - 0.20	15/02/2021
23732822	W204-7		0.20 - 0.20	15/02/2021
23732828	W204-8		0.20 - 0.20	15/02/2021
23732837	W204-9		0.20 - 0.20	15/02/2021
23732845	W204-10		0.20 - 0.20	15/02/2021
23732852	W204-11		0.20 - 0.20	15/02/2021
23732863	W204-12		0.20 - 0.20	15/02/2021
23732870	W204-13		0.20 - 0.20	15/02/2021
23732887	W204-14		0.20 - 0.20	15/02/2021
23732892	W204-15		0.20 - 0.20	15/02/2021
23732898	W204-16		0.20 - 0.20	15/02/2021
23732908	W204-17		0.20 - 0.20	15/02/2021
23732914	W204-18		0.20 - 0.20	15/02/2021

Only received samples which have had analysis scheduled will be shown on the following pages.

Validated

CERTIFICATE OF ANALYSIS

SDG:	210216-60	**Client Reference:**	P18-669	**Report Number:**	588744
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	588425

Results Legend

X Test

N No Determination Possible

Sample Types -

S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

Lab Sample No(s)			23732928		23732934		23732940		23732922		23732766		23732878		23732945		23732951				
Customer Sample Reference			SPIX-1		SPIX-2		SPIX-3		W104-1		W125-1		W125-2		W204-1		W204-2				
AGS Reference																					
Depth (m)			0.20 - 0.20		0.20 - 0.20		0.20 - 0.20		0.20 - 0.20		0.20 - 0.20		0.20 - 0.20		0.20 - 0.20		0.20 - 0.20				
Container			250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)
Sample Type			S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
Ammonium Soil by Titration	All	NDPs: 0 Tests: 24	X			X		X			X			X		X			X		X
Asbestos ID in Solid Samples	All	NDPs: 0 Tests: 12			X					X			X					X			
Asbestos Quantification - Full	All	NDPs: 0 Tests: 1																			
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 24	X			X		X			X			X		X			X		X
EPH CWG GC (S)	All	NDPs: 0 Tests: 24	X			X		X			X			X		X			X		X
GRO by GC-FID (S)	All	NDPs: 0 Tests: 24		X			X		X			X			X		X				X	
Metals in solid samples by OES	All	NDPs: 0 Tests: 24	X			X		X			X			X		X			X		X
PAH by GCMS	All	NDPs: 0 Tests: 24	X			X		X			X			X		X			X		X
pH	All	NDPs: 0 Tests: 24	X			X		X			X			X		X			X		X
Phenols by HPLC (S)	All	NDPs: 0 Tests: 24	X			X		X			X			X		X			X		X
Sample description	All	NDPs: 0 Tests: 24	X			X		X			X			X		X			X		X
Total Organic Carbon	All	NDPs: 0 Tests: 24	X			X		X			X			X		X			X		X
TPH CWG GC (S)	All	NDPs: 0 Tests: 24	X			X		X			X			X		X			X		X
VOC MS (S)	All	NDPs: 0 Tests: 24		X			X		X			X			X		X				X	

23732845	W204-10		0.20 - 0.20	60g VOC (ALE215)	S						X								X
				250g Amber Jar (ALE210)	S	X			X	X		X	X	X	X	X	X	X	
23732837	W204-9		0.20 - 0.20	60g VOC (ALE215)	S						X								X
				250g Amber Jar (ALE210)	S	X			X	X		X	X	X	X	X	X	X	
				1kg TUB with Handle (ALE260)	S		X												
23732828	W204-8		0.20 - 0.20	60g VOC (ALE215)	S						X								X
				250g Amber Jar (ALE210)	S	X			X	X		X	X	X	X	X	X	X	
23732822	W204-7		0.20 - 0.20	60g VOC (ALE215)	S						X								X
				250g Amber Jar (ALE210)	S	X			X	X		X	X	X	X	X	X	X	
				1kg TUB with Handle (ALE260)	S		X												
23732810	W204-6		0.20 - 0.20	60g VOC (ALE215)	S						X								X
				250g Amber Jar (ALE210)	S	X			X	X		X	X	X	X	X	X	X	
23732793	W204-5		0.20 - 0.20	60g VOC (ALE215)	S						X								X
				250g Amber Jar (ALE210)	S	X			X	X		X	X	X	X	X	X	X	
				1kg TUB with Handle (ALE260)	S		X												
23732779	W204-4		0.20 - 0.20	60g VOC (ALE215)	S						X								X
				250g Amber Jar (ALE210)	S	X			X	X		X	X	X	X	X	X	X	
23732960	W204-3		0.20 - 0.20	60g VOC (ALE215)	S						X								X
				250g Amber Jar (ALE210)	S	X			X	X		X	X	X	X	X	X	X	
				1kg TUB with Handle (ALE260)	S		X	X											
23732951	W204-2		0.20 - 0.20	60g VOC (ALE215)	S						X								X

Validated

CERTIFICATE OF ANALYSIS

SDG:	210216-60	**Client Reference:**	P18-669	**Report Number:**	588744
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	588425

Results Legend

X Test

N No Determination Possible

Sample Types -

S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

Lab Sample No(s)			23732852		23732863		23732870		23732887		23732892		23732898		23732908		23732914			
Customer Sample Reference			W204-11		W204-12		W204-13		W204-14		W204-15		W204-16		W204-17		W204-18			
AGS Reference																				
Depth (m)			0.20 - 0.20		0.20 - 0.20		0.20 - 0.20		0.20 - 0.20		0.20 - 0.20		0.20 - 0.20		0.20 - 0.20		0.20 - 0.20			
Container			1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)
Sample Type			S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
Ammonium Soil by Titration	All	NDPs: 0 Tests: 24		X		X			X		X		X		X			X		X	
Asbestos ID in Solid Samples	All	NDPs: 0 Tests: 12	X					X				X					X				
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 24		X		X			X		X		X		X			X		X	
EPH CWG GC (S)	All	NDPs: 0 Tests: 24		X		X			X		X		X		X			X		X	
GRO by GC-FID (S)	All	NDPs: 0 Tests: 24			X		X			X	X			X		X			X		X
Metals in solid samples by OES	All	NDPs: 0 Tests: 24		X		X			X		X		X		X			X		X	
PAH by GCMS	All	NDPs: 0 Tests: 24		X		X			X		X		X		X			X		X	
pH	All	NDPs: 0 Tests: 24		X		X			X		X		X		X			X		X	
Phenols by HPLC (S)	All	NDPs: 0 Tests: 24		X		X			X		X		X		X			X		X	
Sample description	All	NDPs: 0 Tests: 24		X		X			X		X		X		X			X		X	
Total Organic Carbon	All	NDPs: 0 Tests: 24		X		X			X		X		X		X			X		X	
TPH CWG GC (S)	All	NDPs: 0 Tests: 24		X		X			X		X		X		X			X		X	
VOC MS (S)	All	NDPs: 0 Tests: 24			X		X			X	X			X		X			X		X

CERTIFICATE OF ANALYSIS

SDG:	210216-60	**Client Reference:**	P18-669	**Report Number:**	588744
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	588425

Sample Descriptions

Grain Sizes

very fine	<0.063mm	fine	0.063mm - 0.1mm	medium	0.1mm - 2mm	coarse	2mm - 10mm	very coarse	>10mm

Lab Sample No(s)	Customer Sample Ref.	Depth (m)	Colour	Description	Inclusions	Inclusions 2
23732928	SPIX-1	0.20 - 0.20	Dark Brown	Sandy Loam	Stones	Vegetation
23732934	SPIX-2	0.20 - 0.20	Dark Brown	Sandy Clay Loam	Stones	Vegetation
23732940	SPIX-3	0.20 - 0.20	Dark Brown	Sandy Loam	Stones	Vegetation
23732922	W104-1	0.20 - 0.20	Dark Brown	Sandy Loam	Stones	Vegetation
23732766	W125-1	0.20 - 0.20	Dark Brown	Loamy Sand	Stones	None
23732878	W125-2	0.20 - 0.20	Dark Brown	Loamy Sand	Stones	None
23732945	W204-1	0.20 - 0.20	Dark Brown	Sandy Loam	Stones	None
23732951	W204-2	0.20 - 0.20	Dark Brown	Sand	None	Stones
23732960	W204-3	0.20 - 0.20	Dark Brown	Sandy Loam	Stones	Vegetation
23732779	W204-4	0.20 - 0.20	Dark Brown	Sandy Clay Loam	Stones	None
23732793	W204-5	0.20 - 0.20	Dark Brown	Sandy Loam	Stones	None
23732810	W204-6	0.20 - 0.20	Dark Brown	Loamy Sand	Stones	None
23732822	W204-7	0.20 - 0.20	Dark Brown	Sandy Silt Loam	None	Stones
23732828	W204-8	0.20 - 0.20	Dark Brown	Sandy Loam	Stones	None
23732837	W204-9	0.20 - 0.20	Dark Brown	Sandy Loam	Stones	Vegetation
23732845	W204-10	0.20 - 0.20	Dark Brown	Sandy Loam	Stones	Vegetation
23732852	W204-11	0.20 - 0.20	Dark Brown	Sandy Loam	Stones	None
23732863	W204-12	0.20 - 0.20	Dark Brown	Sandy Loam	Stones	None
23732870	W204-13	0.20 - 0.20	Dark Brown	Sand	None	Stones
23732887	W204-14	0.20 - 0.20	Dark Brown	Sandy Loam	Stones	Brick
23732892	W204-15	0.20 - 0.20	Dark Brown	Sandy Loam	Stones	Vegetation
23732898	W204-16	0.20 - 0.20	Dark Brown	Sandy Clay Loam	Stones	Vegetation
23732908	W204-17	0.20 - 0.20	Dark Brown	Sandy Loam	Stones	None
23732914	W204-18	0.20 - 0.20	Dark Brown	Sandy Loam	Stones	None

These descriptions are only intended to act as a cross check if sample identities are questioned, and to provide a log of sample matrices with respect to MCERTS validation. They are not intended as full geological descriptions.

We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally ocurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample.

Other coarse granular materials such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

Validated

CERTIFICATE OF ANALYSIS

SDG:	210216-60	**Client Reference:**	P18-669	**Report Number:**	588744
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	588425

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	SPIX-1	SPIX-2	SPIX-3	W104-1	W125-1	W125-2
			Depth (m)	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	15/02/2021	15/02/2021	15/02/2021	15/02/2021	15/02/2021	15/02/2021
			Sample Time	.	.	.	.	.	.
			Date Received	16/02/2021	16/02/2021	16/02/2021	16/02/2021	16/02/2021	16/02/2021
			SDG Ref	210216-60	210216-60	210216-60	210216-60	210216-60	210216-60
			Lab Sample No.(s)	23732928	23732934	23732940	23732922	23732766	23732878
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		19	18	19	13	14	13
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	<12 M	<12 M	<12 M	<12 M	<12 M
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	0.0123 M	<0.01 M	<0.01 M	<0.01 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M
Soil Organic Matter (SOM)	<0.35 %	TM132		4.72 #	3.55 #	4.26 #	8.22 #	2.26 #	8.95 #
pH	1 pH Units	TM133		8.57 M	8.73 M	8.74 M	8.65 M	9.96 M	9.75 M
Cyanide, Total	<1 mg/kg	TM153		<1 M	<1 M	<1 M	<1 M	<1 M	<1 M
Arsenic	<0.6 mg/kg	TM181		25.3 M	10.6 M	11.9 M	11.3 M	5.08 M	8.01 M
Cadmium	<0.02 mg/kg	TM181		0.623 M	<0.2 M	0.33 M	<0.02 M	<0.02 M	<0.2 M
Chromium	<0.9 mg/kg	TM181		55.6 M	78.3 M	48.5 M	159 M	238 M	214 M
Copper	<1.4 mg/kg	TM181		14.3 M	15.2 M	16.5 M	24.7 M	21.5 M	23 M
Iron	<1000 mg/kg	TM181		54000 #	54300 #	45400 #	80600 #	142000 #	108000 #
Lead	<0.7 mg/kg	TM181		34.5 M	56.8 M	55.3 M	98.3 M	29.3 M	56.1 M
Manganese	<0.13 mg/kg	TM181		4950 M	3420 M	2520 M	12400 M	17500 M	15500 M
Mercury	<0.1 mg/kg	TM181		<0.1 M	<1 M	<1 M	<0.1 M	<0.1 M	<1 M
Nickel	<0.2 mg/kg	TM181		19.4 M	24.6 M	23.9 M	20 M	6.22 M	14.2 M
Selenium	<1 mg/kg	TM181		1.64 #	<10 #	<10 #	5.69 #	3 #	<10 #
Vanadium	<0.2 mg/kg	TM181		91.1 #	111 #	56 #	354 #	248 #	254 #
Zinc	<1.9 mg/kg	TM181		164 M	176 M	208 M	354 M	171 M	180 M

Validated

CERTIFICATE OF ANALYSIS

SDG:	210216-60	**Client Reference:**	P18-669	**Report Number:**	588744
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	588425

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	W204-1	W204-2	W204-3	W204-4	W204-5	W204-6
			Depth (m)	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	15/02/2021	15/02/2021	15/02/2021	15/02/2021	15/02/2021	15/02/2021
			Sample Time	.	.	.	.	.	.
			Date Received	16/02/2021	16/02/2021	16/02/2021	16/02/2021	16/02/2021	16/02/2021
			SDG Ref	210216-60	210216-60	210216-60	210216-60	210216-60	210216-60
			Lab Sample No.(s)	23732945	23732951	23732960	23732779	23732793	23732810
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		13	15	14	18	12	11
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	<12 M	<12 M	<12 M	<12 M	<12 M
Phenol	<0.01 mg/kg	TM062 (S)		0.0114 M	0.0118 M	<0.01 M	<0.01 M	<0.01 M	0.0113 M
Cresols	<0.01 mg/kg	TM062 (S)		0.0228 M	0.0354 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	0.0236 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	0.0708 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M
Soil Organic Matter (SOM)	<0.35 %	TM132		30.5 #	38.3 #	3.09 #	4.88 #	62.2 #	62.8 #
pH	1 pH Units	TM133		11.4 M	11.4 M	9.21 M	9.11 M	11.9 M	12 M
Cyanide, Total	<1 mg/kg	TM153		<1 M	<1 M	2.93 M	2.47 M	<1 M	<1 M
Arsenic	<0.6 mg/kg	TM181		5.29 M	6.5 M	12.1 M	8.93 M	2.08 M	1.67 M
Cadmium	<0.02 mg/kg	TM181		<0.02 M	1.1 M	0.889 M	3.72 M	<0.02 M	0.512 M
Chromium	<0.9 mg/kg	TM181		232 M	332 M	126 M	156 M	310 M	304 M
Copper	<1.4 mg/kg	TM181		17.9 M	17 M	22.7 M	21 M	9.9 M	7.53 M
Iron	<1000 mg/kg	TM181		117000 #	107000 #	133000 #	125000 #	130000 #	92300 #
Lead	<0.7 mg/kg	TM181		42.5 M	253 M	283 M	393 M	<0.7 M	1.66 M
Manganese	<0.13 mg/kg	TM181		17300 M	15300 M	17000 M	12600 M	24900 M	16200 M
Mercury	<0.1 mg/kg	TM181		<0.1 M	<0.1 M	0.207 M	<0.1 M	<0.1 M	<0.1 M
Nickel	<0.2 mg/kg	TM181		9.57 M	27.9 M	20.1 M	13.9 M	2.89 M	3.66 M
Selenium	<1 mg/kg	TM181		3.75 #	3.83 #	4.94 #	3.94 #	4.96 #	5.97 #
Vanadium	<0.2 mg/kg	TM181		248 #	326 #	490 #	662 #	233 #	228 #
Zinc	<1.9 mg/kg	TM181		189 M	248 M	1310 M	1580 M	48.3 M	48.1 M
Asbestos Quantification - Gravimetric - %	<0.001 %	TM304				0.01 #			
Asbestos Quantification - PCOM Evaluation - %	<0.001 %	TM304				0.006 #			
Additional Asbestos Components (Using TM048)		TM304				Additional componen #			
Analysts Comments		TM304				Fibre bundles in soil.			
Asbestos Quantification - Total - %	<0.001 %	TM304				0.016 #			

Validated

CERTIFICATE OF ANALYSIS

SDG:	210216-60	**Client Reference:**	P18-669	**Report Number:**	588744
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	588425

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	W204-7	W204-8	W204-9	W204-10	W204-11	W204-12
			Depth (m)	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	15/02/2021	15/02/2021	15/02/2021	15/02/2021	15/02/2021	15/02/2021
			Sample Time	.	.	.	.	.	.
			Date Received	16/02/2021	16/02/2021	16/02/2021	16/02/2021	16/02/2021	16/02/2021
			SDG Ref	210216-60	210216-60	210216-60	210216-60	210216-60	210216-60
			Lab Sample No.(s)	23732822	23732828	23732837	23732845	23732852	23732863
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		13	14	15	14	13	15
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	<12 M	<12 M	<12 M	<12 M	<12 M
Phenol	<0.01 mg/kg	TM062 (S)		0.0115 M	0.0234 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Cresols	<0.01 mg/kg	TM062 (S)		0.0115 M	<0.01 M	<0.01 M	<0.01 M	0.0115 M	0.0117 M
Xylenols	<0.015 mg/kg	TM062 (S)		0.506 M	<0.015 M	<0.015 M	0.269 M	<0.015 M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		0.529 M	<0.035 M	<0.035 M	0.269 M	<0.035 M	<0.035 M
Soil Organic Matter (SOM)	<0.35 %	TM132		49 #	38.1 #	52.9 #	47.6 #	26.5 #	18.4 #
pH	1 pH Units	TM133		11.3 M	11.6 M	11 M	11 M	10 M	9.39 M
Cyanide, Total	<1 mg/kg	TM153		<1 M	<1 M	<1 M	<1 M	<1 M	<1 M
Arsenic	<0.6 mg/kg	TM181		7.82 M	6.06 M	7.16 M	5.69 M	4.45 M	4.86 M
Cadmium	<0.02 mg/kg	TM181		<0.02 M	0.81 M	<0.02 M	0.946 M	<0.02 M	0.847 M
Chromium	<0.9 mg/kg	TM181		269 M	198 M	219 M	237 M	196 M	392 M
Copper	<1.4 mg/kg	TM181		18.1 M	18.2 M	23.1 M	14.7 M	13.8 M	11 M
Iron	<1000 mg/kg	TM181		107000 #	120000 #	102000 #	90400 #	84900 #	149000 #
Lead	<0.7 mg/kg	TM181		39.8 M	34.5 M	49.8 M	66.5 M	32.8 M	40 M
Manganese	<0.13 mg/kg	TM181		23300 M	12500 M	17200 M	13400 M	12200 M	21900 M
Mercury	<0.1 mg/kg	TM181		<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M
Nickel	<0.2 mg/kg	TM181		10.9 M	10.3 M	13.2 M	8.17 M	10.5 M	4.57 M
Selenium	<1 mg/kg	TM181		6.56 #	3.35 #	4.16 #	5.48 #	3.21 #	5.44 #
Vanadium	<0.2 mg/kg	TM181		259 #	316 #	252 #	204 #	175 #	404 #
Zinc	<1.9 mg/kg	TM181		174 M	174 M	213 M	260 M	141 M	122 M

Validated

CERTIFICATE OF ANALYSIS

SDG:	210216-60	**Client Reference:**	P18-669	**Report Number:**	588744
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	588425

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	W204-13	W204-14	W204-15	W204-16	W204-17	W204-18
			Depth (m)	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	15/02/2021	15/02/2021	15/02/2021	15/02/2021	15/02/2021	15/02/2021
			Sample Time	.	.	.	.	.	.
			Date Received	16/02/2021	16/02/2021	16/02/2021	16/02/2021	16/02/2021	16/02/2021
			SDG Ref	210216-60	210216-60	210216-60	210216-60	210216-60	210216-60
			Lab Sample No.(s)	23732870	23732887	23732892	23732898	23732908	23732914
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		14	16	14	16	12	14
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	<12 M	<12 M	<12 M	<12 M	<12 M
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 M	0.0119 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	0.0116 M	0.012 M	0.0342 M	<0.01 M
Xylenols	<0.015 mg/kg	TM062 (S)		0.789 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		0.789 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M
Soil Organic Matter (SOM)	<0.35 %	TM132		7.98 #	24.3 #	41.4 #	41 #	6.43 #	11.4 #
pH	1 pH Units	TM133		11.1 M	11.1 M	9.59 M	10.4 M	11.1 M	11.4 M
Cyanide, Total	<1 mg/kg	TM153		1.29 M	1.17 M	<1 M	<1 M	2.53 M	2.19 M
Arsenic	<0.6 mg/kg	TM181		8.09 M	9.95 M	6.73 M	6.29 M	15 M	13.1 M
Cadmium	<0.02 mg/kg	TM181		0.465 M	0.329 M	<0.02 M	0.727 M	1.86 M	4.03 M
Chromium	<0.9 mg/kg	TM181		132 M	96.4 M	226 M	286 M	213 M	93.2 M
Copper	<1.4 mg/kg	TM181		15.1 M	18.5 M	15 M	14.4 M	22.1 M	23 M
Iron	<1000 mg/kg	TM181		119000 #	136000 #	84800 #	83300 #	209000 #	231000 #
Lead	<0.7 mg/kg	TM181		255 M	381 M	48.5 M	36.3 M	486 M	1050 M
Manganese	<0.13 mg/kg	TM181		13000 M	13700 M	12600 M	14600 M	24300 M	18300 M
Mercury	<0.1 mg/kg	TM181		<0.1 M	<0.1 M	<0.1 M	<0.1 M	<1 M	0.437 M
Nickel	<0.2 mg/kg	TM181		9.94 M	12.3 M	11.4 M	8.48 M	23.3 M	11.4 M
Selenium	<1 mg/kg	TM181		2.59 #	1.9 #	5.26 #	6.36 #	10.2 #	<1 #
Vanadium	<0.2 mg/kg	TM181		671 #	364 #	202 #	327 #	1180 #	857 #
Zinc	<1.9 mg/kg	TM181		901 M	1250 M	170 M	162 M	1100 M	2360 M

Validated

CERTIFICATE OF ANALYSIS

SDG:	210216-60	**Client Reference:**	P18-669	**Report Number:**	588744
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	588425

PAH by GCMS

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	SPIX-1	SPIX-2	SPIX-3	W104-1	W125-1	W125-2
			Depth (m)	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	15/02/2021	15/02/2021	15/02/2021	15/02/2021	15/02/2021	15/02/2021
			Sample Time	.	.	.	.	.	.
			Date Received	16/02/2021	16/02/2021	16/02/2021	16/02/2021	16/02/2021	16/02/2021
			SDG Ref	210216-60	210216-60	210216-60	210216-60	210216-60	210216-60
			Lab Sample No.(s)	23732928	23732934	23732940	23732922	23732766	23732878
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		94.1	92.1	94.8	96.2	96.8	96.4
Acenaphthene-d10 % recovery**	%	TM218		95.8	92.5	93.7	92.5	97.7	94.8
Phenanthrene-d10 % recovery**	%	TM218		97.6	93.3	95.1	95.7	97.9	97.3
Chrysene-d12 % recovery**	%	TM218		86	77.3	79.9	90.2	82	83.8
Perylene-d12 % recovery**	%	TM218		86.4	71.6	73.9	80.4	79.8	78.4
Naphthalene	<9 µg/kg	TM218		90.9 M	77.2 M	75.1 M	24.2 M	23 M	523 M
Acenaphthylene	<12 µg/kg	TM218		55.8 M	43.4 M	49.7 M	<12 M	<12 M	746 M
Acenaphthene	<8 µg/kg	TM218		21.6 M	13.9 M	16.5 M	21.4 M	29.5 M	42.5 M
Fluorene	<10 µg/kg	TM218		48.1 M	29.1 M	30.8 M	16.3 M	12.1 M	141 M
Phenanthrene	<15 µg/kg	TM218		401 M	278 M	289 M	184 M	199 M	1820 M
Anthracene	<16 µg/kg	TM218		97.6 M	76.8 M	94.8 M	40.7 M	49.4 M	1090 M
Fluoranthene	<17 µg/kg	TM218		699 M	591 M	684 M	289 M	696 M	6380 M
Pyrene	<15 µg/kg	TM218		526 M	458 M	518 M	279 M	733 M	5060 M
Benz(a)anthracene	<14 µg/kg	TM218		312 M	268 M	322 M	165 M	568 M	2940 M
Chrysene	<10 µg/kg	TM218		283 M	250 M	297 M	151 M	590 M	3140 M
Benzo(b)fluoranthene	<15 µg/kg	TM218		492 M	370 M	425 M	238 M	1160 M	4850 M
Benzo(k)fluoranthene	<14 µg/kg	TM218		150 M	116 M	142 M	74.7 M	401 M	1570 M
Benzo(a)pyrene	<15 µg/kg	TM218		283 M	222 M	268 M	178 M	839 M	3220 M
Indeno(1,2,3-cd)pyrene	<18 µg/kg	TM218		285 M	195 M	252 M	169 M	743 M	2700 M
Dibenzo(a,h)anthracene	<23 µg/kg	TM218		43.1 M	40.5 M	49.3 M	<23 M	111 M	513 M
Benzo(g,h,i)perylene	<24 µg/kg	TM218		218 M	180 M	211 M	157 M	662 M	2390 M
PAH, Total Detected USEPA 16	<118 µg/kg	TM218		4010	3210	3720	1990	6810	37100

Validated

CERTIFICATE OF ANALYSIS

SDG:	210216-60	**Client Reference:**	P18-669	**Report Number:**	588744
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	588425

PAH by GCMS

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	W204-1	W204-2	W204-3	W204-4	W204-5	W204-6
			Depth (m)	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	15/02/2021	15/02/2021	15/02/2021	15/02/2021	15/02/2021	15/02/2021
			Sample Time	.	.	.	.	.	.
			Date Received	16/02/2021	16/02/2021	16/02/2021	16/02/2021	16/02/2021	16/02/2021
			SDG Ref	210216-60	210216-60	210216-60	210216-60	210216-60	210216-60
			Lab Sample No.(s)	23732945	23732951	23732960	23732779	23732793	23732810
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		97.3	96.5	95.7	97.5	93.1	95.5
Acenaphthene-d10 % recovery**	%	TM218		99.1	97.8	94.9	96.5	90.8	96.7
Phenanthrene-d10 % recovery**	%	TM218		94.8	97.4	97.5	97.9	91.4	92.9
Chrysene-d12 % recovery**	%	TM218		77.9	84.8	83.3	83.3	81.5	75.6
Perylene-d12 % recovery**	%	TM218		77.5	83.2	74.1	84	70.3	68.8
Naphthalene	<9 µg/kg	TM218		11900 M	5890 M	237 M	206 M	3580 M	2630 M
Acenaphthylene	<12 µg/kg	TM218		4510 M	1760 M	21.9 M	20.2 M	816 M	820 M
Acenaphthene	<8 µg/kg	TM218		280 M	151 M	20.1 M	24.5 M	65.2 M	61.6 M
Fluorene	<10 µg/kg	TM218		4750 M	1140 M	34.9 M	32.8 M	479 M	614 M
Phenanthrene	<15 µg/kg	TM218		29300 M	8110 M	276 M	255 M	4270 M	6050 M
Anthracene	<16 µg/kg	TM218		10000 M	2130 M	78.5 M	104 M	1000 M	2170 M
Fluoranthene	<17 µg/kg	TM218		31500 M	9520 M	561 M	539 M	5940 M	8380 M
Pyrene	<15 µg/kg	TM218		21200 M	6430 M	561 M	531 M	4210 M	5910 M
Benz(a)anthracene	<14 µg/kg	TM218		9910 M	3310 M	328 M	314 M	2100 M	2600 M
Chrysene	<10 µg/kg	TM218		8260 M	2690 M	349 M	348 M	2030 M	2170 M
Benzo(b)fluoranthene	<15 µg/kg	TM218		11100 M	4300 M	572 M	552 M	2440 M	2930 M
Benzo(k)fluoranthene	<14 µg/kg	TM218		4220 M	1340 M	176 M	177 M	759 M	924 M
Benzo(a)pyrene	<15 µg/kg	TM218		7240 M	2550 M	358 M	346 M	1430 M	1930 M
Indeno(1,2,3-cd)pyrene	<18 µg/kg	TM218		6530 M	2450 M	305 M	308 M	1170 M	1430 M
Dibenzo(a,h)anthracene	<23 µg/kg	TM218		993 M	414 M	62.2 M	43.7 M	232 M	236 M
Benzo(g,h,i)perylene	<24 µg/kg	TM218		4360 M	1690 M	279 M	257 M	867 M	1030 M
PAH, Total Detected USEPA 16	<118 µg/kg	TM218		166000	53900	4220	4060	31400	39900

Validated

CERTIFICATE OF ANALYSIS

SDG:	210216-60	**Client Reference:**	P18-669	**Report Number:**	588744
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	588425

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	W204-7	W204-8	W204-9	W204-10	W204-11	W204-12
			Depth (m)	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	15/02/2021	15/02/2021	15/02/2021	15/02/2021	15/02/2021	15/02/2021
			Sample Time	.	.	.	.	.	.
			Date Received	16/02/2021	16/02/2021	16/02/2021	16/02/2021	16/02/2021	16/02/2021
			SDG Ref	210216-60	210216-60	210216-60	210216-60	210216-60	210216-60
			Lab Sample No.(s)	23732822	23732828	23732837	23732845	23732852	23732863
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		98.9	96.1	94.8	97.7	93.1	94.1
Acenaphthene-d10 % recovery**	%	TM218		97.2	92.6	95.4	97.4	85.4	91.9
Phenanthrene-d10 % recovery**	%	TM218		94.9	93.8	92.9	98.4	87.2	95.1
Chrysene-d12 % recovery**	%	TM218		78.2	92.7	76.4	80.4	78.2	79.1
Perylene-d12 % recovery**	%	TM218		77	85.1	72.9	70.3	73.3	70.8
Naphthalene	<9 µg/kg	TM218		8470 M	6180 M	2620 M	2770 M	3670 M	3020 M
Acenaphthylene	<12 µg/kg	TM218		2550 M	2210 M	884 M	1040 M	1170 M	864 M
Acenaphthene	<8 µg/kg	TM218		232 M	163 M	76.2 M	96.1 M	65.2 M	60.3 M
Fluorene	<10 µg/kg	TM218		1680 M	1590 M	445 M	614 M	708 M	480 M
Phenanthrene	<15 µg/kg	TM218		12200 M	11000 M	4220 M	5880 M	7670 M	5130 M
Anthracene	<16 µg/kg	TM218		3530 M	3350 M	1330 M	1700 M	2230 M	1370 M
Fluoranthene	<17 µg/kg	TM218		17200 M	16700 M	7540 M	9410 M	9610 M	6770 M
Pyrene	<15 µg/kg	TM218		12400 M	11900 M	5360 M	6660 M	6780 M	4770 M
Benz(a)anthracene	<14 µg/kg	TM218		6240 M	6200 M	2760 M	3210 M	3340 M	2270 M
Chrysene	<10 µg/kg	TM218		5260 M	4760 M	2490 M	2710 M	2850 M	1920 M
Benzo(b)fluoranthene	<15 µg/kg	TM218		7940 M	7670 M	3550 M	3950 M	4090 M	2620 M
Benzo(k)fluoranthene	<14 µg/kg	TM218		2650 M	2290 M	1050 M	1240 M	1430 M	836 M
Benzo(a)pyrene	<15 µg/kg	TM218		4750 M	4490 M	2070 M	2280 M	2570 M	1590 M
Indeno(1,2,3-cd)pyrene	<18 µg/kg	TM218		4300 M	3770 M	1840 M	1950 M	2260 M	1340 M
Dibenzo(a,h)anthracene	<23 µg/kg	TM218		682 M	728 M	311 M	373 M	415 M	253 M
Benzo(g,h,i)perylene	<24 µg/kg	TM218		2970 M	2820 M	1310 M	1490 M	1680 M	1010 M
PAH, Total Detected USEPA 16	<118 µg/kg	TM218		93000	85900	37800	45400	50500	34300

Validated

CERTIFICATE OF ANALYSIS

SDG:	210216-60	**Client Reference:**	P18-669	**Report Number:**	588744
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	588425

PAH by GCMS

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	W204-13	W204-14	W204-15	W204-16	W204-17	W204-18
			Depth (m)	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	15/02/2021	15/02/2021	15/02/2021	15/02/2021	15/02/2021	15/02/2021
			Sample Time	.	.	.	.	.	.
			Date Received	16/02/2021	16/02/2021	16/02/2021	16/02/2021	16/02/2021	16/02/2021
			SDG Ref	210216-60	210216-60	210216-60	210216-60	210216-60	210216-60
			Lab Sample No.(s)	23732870	23732887	23732892	23732898	23732908	23732914
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		95.7	99.2	94.7	96.1	90	88.5
Acenaphthene-d10 % recovery**	%	TM218		96.6	98.1	93.4	97.1	89.8	90.5
Phenanthrene-d10 % recovery**	%	TM218		97.8	99.9	94.3	94.6	88	89
Chrysene-d12 % recovery**	%	TM218		82.1	81	78.2	78.4	75.6	93.5
Perylene-d12 % recovery**	%	TM218		80	74.5	70.6	76.2	76.6	83
Naphthalene	<9 µg/kg	TM218		2910 M	4580 M	1860 M	2680 M	4350 M	7170 M
Acenaphthylene	<12 µg/kg	TM218		625 M	1330 M	663 M	864 M	9020 M	32300 M
Acenaphthene	<8 µg/kg	TM218		134 M	159 M	69.7 M	101 M	685 M	2030 M
Fluorene	<10 µg/kg	TM218		575 M	1580 M	424 M	551 M	19700 M	53000 M
Phenanthrene	<15 µg/kg	TM218		4360 M	8820 M	3890 M	4790 M	89500 M	226000 M
Anthracene	<16 µg/kg	TM218		1150 M	5230 M	839 M	1180 M	42700 M	86000 M
Fluoranthene	<17 µg/kg	TM218		7080 M	13900 M	5480 M	6750 M	111000 M	331000 M
Pyrene	<15 µg/kg	TM218		5150 M	9440 M	4010 M	4840 M	69100 M	204000 M
Benz(a)anthracene	<14 µg/kg	TM218		2600 M	4930 M	1900 M	2450 M	34900 M	109000 M
Chrysene	<10 µg/kg	TM218		2360 M	4270 M	1610 M	2020 M	34600 M	84600 M
Benzo(b)fluoranthene	<15 µg/kg	TM218		3650 M	6310 M	2540 M	3310 M	39800 M	121000 M
Benzo(k)fluoranthene	<14 µg/kg	TM218		1060 M	1590 M	855 M	1040 M	13600 M	36500 M
Benzo(a)pyrene	<15 µg/kg	TM218		2180 M	3210 M	1580 M	1920 M	24400 M	71900 M
Indeno(1,2,3-cd)pyrene	<18 µg/kg	TM218		2040 M	2570 M	1230 M	1820 M	18600 M	56700 M
Dibenzo(a,h)anthracene	<23 µg/kg	TM218		296 M	588 M	273 M	296 M	4280 M	12000 M
Benzo(g,h,i)perylene	<24 µg/kg	TM218		1470 M	2000 M	967 M	1270 M	13000 M	39700 M
PAH, Total Detected USEPA 16	<118 µg/kg	TM218		37600	70500	28200	35900	529000	1470000

Validated

CERTIFICATE OF ANALYSIS

SDG:	210216-60	**Client Reference:**	P18-669	**Report Number:**	588744
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	588425

TPH CWG (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	SPIX-1	SPIX-2	SPIX-3	W104-1	W125-1	W125-2
			Depth (m)	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	15/02/2021	15/02/2021	15/02/2021	15/02/2021	15/02/2021	15/02/2021
			Sample Time	.	.	.	.	.	.
			Date Received	16/02/2021	16/02/2021	16/02/2021	16/02/2021	16/02/2021	16/02/2021
			SDG Ref	210216-60	210216-60	210216-60	210216-60	210216-60	210216-60
			Lab Sample No.(s)	23732928	23732934	23732940	23732922	23732766	23732878
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		99	89	79	85	99	84
Aliphatics >C5-C6	<10 µg/kg	TM089		<10	<10	<10	<10	<10	<10
Aliphatics >C6-C8	<10 µg/kg	TM089		<10	<10	<10	<10	<10	<10
Aliphatics >C8-C10	<10 µg/kg	TM089		<10	<10	<10	<10	<10	<10
Aliphatics >C10-C12	<1000 µg/kg	TM414		<1000	<1000	<1000	<1000	<1000	<1000
Aliphatics >C12-C16	<1000 µg/kg	TM414		<1000	<1000	<1000	<1000	1070	1680
Aliphatics >C16-C21	<1000 µg/kg	TM414		<1000	<1000	<1000	7790	5700	12900
Aliphatics >C21-C35	<1000 µg/kg	TM414		8720	<1000	8800	7680	12400	26800
Aliphatics >C35-C44	<1000 µg/kg	TM414		1700	<1000	5710	<1000	1400	4230
Total Aliphatics >C10-C44	<5000 µg/kg	TM414		11100	<5000	14900	15900	20500	45600
Total Aliphatics & Aromatics >C10-C44	<10000 µg/kg	TM414		22300	<10000	29100	99300	64800	147000
Aromatics >EC5-EC7	<10 µg/kg	TM089		<10	<10	<10	<10	<10	<10
Aromatics >EC7-EC8	<10 µg/kg	TM089		<10	<10	<10	<10	<10	<10
Aromatics >EC8-EC10	<10 µg/kg	TM089		<10	<10	<10	<10	<10	<10
Aromatics > EC10-EC12	<1000 µg/kg	TM414		<1000	<1000	<1000	<1000	<1000	<1000
Aromatics > EC12-EC16	<1000 µg/kg	TM414		<1000	<1000	<1000	<1000	<1000	1190
Aromatics > EC16-EC21	<1000 µg/kg	TM414		1150	<1000	1400	7590	3830	14200
Aromatics > EC21-EC35	<1000 µg/kg	TM414		8880	2860	11400	57300	36900	76900
Aromatics >EC35-EC44	<1000 µg/kg	TM414		<1000	<1000	1280	18600	3410	8360
Aromatics > EC40-EC44	<1000 µg/kg	TM414		<1000	<1000	<1000	2110	<1000	<1000
Total Aromatics > EC10-EC44	<5000 µg/kg	TM414		11200	<5000	14200	83400	44300	101000
Total Aliphatics & Aromatics >C5-C44	<10000 µg/kg	TM414		22300	<10000	29100	99300	64800	147000
Total Aliphatics >C5-C10	<50 µg/kg	TM089		<50	<50	<50	<50	<50	<50
Total Aromatics >EC5-EC10	<50 µg/kg	TM089		<50	<50	<50	<50	<50	<50
GRO >C5-C10	<20 µg/kg	TM089		<20	<20	<20	<20	<20	<20

Validated

CERTIFICATE OF ANALYSIS

SDG:	210216-60	**Client Reference:**	P18-669	**Report Number:**	588744
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	588425

TPH CWG (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	W204-1	W204-2	W204-3	W204-4	W204-5	W204-6
			Depth (m)	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	15/02/2021	15/02/2021	15/02/2021	15/02/2021	15/02/2021	15/02/2021
			Sample Time	.	.	.	.	.	.
			Date Received	16/02/2021	16/02/2021	16/02/2021	16/02/2021	16/02/2021	16/02/2021
			SDG Ref	210216-60	210216-60	210216-60	210216-60	210216-60	210216-60
			Lab Sample No.(s)	23732945	23732951	23732960	23732779	23732793	23732810
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		22.6 4	32.3 4	95.9	115	8.2	10.9 4
Aliphatics >C5-C6	<10 µg/kg	TM089		<10 4	<10 4	<10	<10	<10	10.2 4
Aliphatics >C6-C8	<10 µg/kg	TM089		16 4	34.2 4	<10	<10	23.9	50.9 4
Aliphatics >C8-C10	<10 µg/kg	TM089		16 4	35.4 4	17.4	<10	22.8	42.9 4
Aliphatics >C10-C12	<1000 µg/kg	TM414		<1000	<1000	<1000	<1000	3340	2170
Aliphatics >C12-C16	<1000 µg/kg	TM414		5500	2730	<1000	<1000	7370	5750
Aliphatics >C16-C21	<1000 µg/kg	TM414		32400	12500	18700	19300	10100	19300
Aliphatics >C21-C35	<1000 µg/kg	TM414		54600	29900	66000	56400	69900	106000
Aliphatics >C35-C44	<1000 µg/kg	TM414		9230	4600	17300	6900	5120	6240
Total Aliphatics >C10-C44	<5000 µg/kg	TM414		102000	50000	103000	83400	95800	140000
Total Aliphatics & Aromatics >C10-C44	<10000 µg/kg	TM414		449000	281000	131000	123000	174000	652000
Aromatics >EC5-EC7	<10 µg/kg	TM089		<10 4	<10 4	<10	<10	<10	<10 4
Aromatics >EC7-EC8	<10 µg/kg	TM089		<10 4	<10 4	<10	<10	<10	<10 4
Aromatics >EC8-EC10	<10 µg/kg	TM089		11.4 4	23.6 4	11.6	<10	14.8	29.4 4
Aromatics > EC10-EC12	<1000 µg/kg	TM414		12600	10600	<1000	<1000	4400	4560
Aromatics > EC12-EC16	<1000 µg/kg	TM414		18700	13500	<1000	<1000	9740	37300
Aromatics > EC16-EC21	<1000 µg/kg	TM414		109000	78200	2200	3010	23600	202000
Aromatics > EC21-EC35	<1000 µg/kg	TM414		185000	116000	23700	34000	39500	246000
Aromatics >EC35-EC44	<1000 µg/kg	TM414		20700	12400	<1000	2130	1040	22200
Aromatics > EC40-EC44	<1000 µg/kg	TM414		1400	<1000	<1000	<1000	<1000	<1000
Total Aromatics > EC10-EC44	<5000 µg/kg	TM414		347000	231000	27500	39500	78300	512000
Total Aliphatics & Aromatics >C5-C44	<10000 µg/kg	TM414		449000	281000	131000	123000	174000	652000
Total Aliphatics >C5-C10	<50 µg/kg	TM089		<50 4	69.6 4	<50	<50	<50	104 4
Total Aromatics >EC5-EC10	<50 µg/kg	TM089		<50 4	<50 4	<50	<50	<50	<50 4
GRO >C5-C10	<20 µg/kg	TM089		<20 4	69.6 4	<20	<20	<20	104 4

Validated

CERTIFICATE OF ANALYSIS

SDG:	210216-60	**Client Reference:**	P18-669	**Report Number:**	588744
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	588425

TPH CWG (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	W204-7	W204-8	W204-9	W204-10	W204-11	W204-12
			Depth (m)	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	15/02/2021	15/02/2021	15/02/2021	15/02/2021	15/02/2021	15/02/2021
			Sample Time	.	.	.	.	.	.
			Date Received	16/02/2021	16/02/2021	16/02/2021	16/02/2021	16/02/2021	16/02/2021
			SDG Ref	210216-60	210216-60	210216-60	210216-60	210216-60	210216-60
			Lab Sample No.(s)	23732822	23732828	23732837	23732845	23732852	23732863
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		25.5 4	47.3 4	12.6 4	14 4	18.6 4	14.9 4
Aliphatics >C5-C6	<10 µg/kg	TM089		<10 4	<10 4	<10 4	<10 4	<10 4	<10 4
Aliphatics >C6-C8	<10 µg/kg	TM089		35.7 4	<10 4	26.9 4	18.7 4	<10 4	<10 4
Aliphatics >C8-C10	<10 µg/kg	TM089		44.9 4	10.5 4	25.7 4	16.4 4	<10 4	<10 4
Aliphatics >C10-C12	<1000 µg/kg	TM414		<1000	<1000	2300	1470	1790	1720
Aliphatics >C12-C16	<1000 µg/kg	TM414		3540	4790	5490	3710	5170	5520
Aliphatics >C16-C21	<1000 µg/kg	TM414		15700	37900	10700	9390	6810	8370
Aliphatics >C21-C35	<1000 µg/kg	TM414		28600	44100	36200	29600	25200	44200
Aliphatics >C35-C44	<1000 µg/kg	TM414		5740	10200	9550	5380	6010	32600
Total Aliphatics >C10-C44	<5000 µg/kg	TM414		54100	97600	64300	49600	45000	92500
Total Aliphatics & Aromatics >C10-C44	<10000 µg/kg	TM414		271000	308000	165000	164000	207000	274000
Aromatics >EC5-EC7	<10 µg/kg	TM089		<10 4	<10 4	<10 4	<10 4	<10 4	<10 4
Aromatics >EC7-EC8	<10 µg/kg	TM089		<10 4	<10 4	<10 4	<10 4	<10 4	<10 4
Aromatics >EC8-EC10	<10 µg/kg	TM089		29.9 4	<10 4	17.6 4	11.7 4	<10 4	<10 4
Aromatics > EC10-EC12	<1000 µg/kg	TM414		7190	9060	3520	2920	4560	4850
Aromatics > EC12-EC16	<1000 µg/kg	TM414		12800	14000	7220	6270	8000	8300
Aromatics > EC16-EC21	<1000 µg/kg	TM414		72200	66700	26000	30600	51900	52300
Aromatics > EC21-EC35	<1000 µg/kg	TM414		114000	111000	60700	69400	90600	109000
Aromatics >EC35-EC44	<1000 µg/kg	TM414		10700	10000	3360	5630	6590	6940
Aromatics > EC40-EC44	<1000 µg/kg	TM414		<1000	1260	<1000	<1000	<1000	<1000
Total Aromatics > EC10-EC44	<5000 µg/kg	TM414		217000	211000	101000	115000	162000	182000
Total Aliphatics & Aromatics >C5-C44	<10000 µg/kg	TM414		271000	308000	165000	164000	207000	274000
Total Aliphatics >C5-C10	<50 µg/kg	TM089		80.5 4	<50 4	52.7 4	<50 4	<50 4	<50 4
Total Aromatics >EC5-EC10	<50 µg/kg	TM089		<50 4	<50 4	<50 4	<50 4	<50 4	<50 4
GRO >C5-C10	<20 µg/kg	TM089		80.5 4	<20 4	52.7 4	<20 4	<20 4	<20 4

Validated

CERTIFICATE OF ANALYSIS

SDG:	210216-60	**Client Reference:**	P18-669	**Report Number:**	588744
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	588425

TPH CWG (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	W204-13	W204-14	W204-15	W204-16	W204-17	W204-18
			Depth (m)	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	15/02/2021	15/02/2021	15/02/2021	15/02/2021	15/02/2021	15/02/2021
			Sample Time	.	.	.	.	.	.
			Date Received	16/02/2021	16/02/2021	16/02/2021	16/02/2021	16/02/2021	16/02/2021
			SDG Ref	210216-60	210216-60	210216-60	210216-60	210216-60	210216-60
			Lab Sample No.(s)	23732870	23732887	23732892	23732898	23732908	23732914
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		79	85.3 2	24.7 4	18.5 4	94	106
Aliphatics >C5-C6	<10 µg/kg	TM089		<10	<10 2	<10 4	<10 4	<10	<10
Aliphatics >C6-C8	<10 µg/kg	TM089		12.8	34.5 2	<10 4	10.8 4	65	23.4
Aliphatics >C8-C10	<10 µg/kg	TM089		18.6	54.7 2	<10 4	14.4 4	73	36.3
Aliphatics >C10-C12	<1000 µg/kg	TM414		<1000	<1000	<1000	1940	<1000	<1000
Aliphatics >C12-C16	<1000 µg/kg	TM414		<1000	<1000	<1000	5610	<1000	<1000
Aliphatics >C16-C21	<1000 µg/kg	TM414		4640	3250	3290	16200	20800	26800
Aliphatics >C21-C35	<1000 µg/kg	TM414		21800	12300	5980	41900	59300	49500
Aliphatics >C35-C44	<1000 µg/kg	TM414		3910	2680	<1000	17400	20700	16200
Total Aliphatics >C10-C44	<5000 µg/kg	TM414		30700	18600	10100	83000	101000	93300
Total Aliphatics & Aromatics >C10-C44	<10000 µg/kg	TM414		77200	118000	57200	245000	712000	1790000
Aromatics >EC5-EC7	<10 µg/kg	TM089		<10	<10 2	<10 4	<10 4	<10	<10
Aromatics >EC7-EC8	<10 µg/kg	TM089		<10	<10 2	<10 4	<10 4	<10	<10
Aromatics >EC8-EC10	<10 µg/kg	TM089		12.8	35.7 2	<10 4	<10 4	49	24.6
Aromatics > EC10-EC12	<1000 µg/kg	TM414		2110	4550	1620	3870	5330	6370
Aromatics > EC12-EC16	<1000 µg/kg	TM414		<1000	3390	2220	9580	12800	51600
Aromatics > EC16-EC21	<1000 µg/kg	TM414		12500	33300	17400	53800	161000	550000
Aromatics > EC21-EC35	<1000 µg/kg	TM414		28900	54600	23600	89000	363000	942000
Aromatics >EC35-EC44	<1000 µg/kg	TM414		2060	3740	2240	6040	68800	150000
Aromatics > EC40-EC44	<1000 µg/kg	TM414		<1000	<1000	<1000	<1000	10800	27700
Total Aromatics > EC10-EC44	<5000 µg/kg	TM414		46500	99600	47000	162000	611000	1700000
Total Aliphatics & Aromatics >C5-C44	<10000 µg/kg	TM414		77200	118000	57200	245000	712000	1790000
Total Aliphatics >C5-C10	<50 µg/kg	TM089		<50	89.3 2	<50 4	<50 4	138	59.7
Total Aromatics >EC5-EC10	<50 µg/kg	TM089		<50	<50 2	<50 4	<50 4	<50	<50
GRO >C5-C10	<20 µg/kg	TM089		<20	89.3 2	<20 4	<20 4	138	59.7

Validated

CERTIFICATE OF ANALYSIS

SDG:	210216-60	**Client Reference:**	P18-669	**Report Number:**	588744
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	588425

VOC MS (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	SPIX-1	SPIX-2	SPIX-3	W104-1	W125-1	W125-2
			Depth (m)	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	15/02/2021	15/02/2021	15/02/2021	15/02/2021	15/02/2021	15/02/2021
			Sample Time	.	.	.	.	.	.
			Date Received	16/02/2021	16/02/2021	16/02/2021	16/02/2021	16/02/2021	16/02/2021
			SDG Ref	210216-60	210216-60	210216-60	210216-60	210216-60	210216-60
			Lab Sample No.(s)	23732928	23732934	23732940	23732922	23732766	23732878
			AGS Reference						
Dibromofluoromethane**	%	TM116		111	134	107	110	109	109
Toluene-d8**	%	TM116		99.9	99.4	98.2	98.3	99.8	98.7
4-Bromofluorobenzene**	%	TM116		94.7	97.7	91.9	92.6	95.7	97.9
Methyl Tertiary Butyl Ether	<10 µg/kg	TM116		<200 M	<200 M	<200 M	<200 M	<200 M	<200 M
Benzene	<9 µg/kg	TM116		<180 M	<180 M	<180 M	<180 M	<180 M	<180 M
Toluene	<7 µg/kg	TM116		<140 M	<140 M	<140 M	<140 M	<140 M	<140 M
Ethylbenzene	<4 µg/kg	TM116		<80 M	<80 M	<80 M	<80 M	<80 M	<80 M
p/m-Xylene	<10 µg/kg	TM116		<200 #	<200 #	<200 #	<200 #	<200 #	<200 #
o-Xylene	<10 µg/kg	TM116		<200 M	<200 M	<200 M	<200 M	<200 M	<200 M
Naphthalene	<13 µg/kg	TM116		<260 M	<260 M	<260 M	<260 M	<260 M	<260 M
Sum of Detected Xylenes	<0.02 mg/kg	TM116		<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Sum of BTEX	<40 µg/kg	TM116		<800	<800	<800	<800	<800	<800

CERTIFICATE OF ANALYSIS

SDG:	210216-60	**Client Reference:**	P18-669	**Report Number:**	588744
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	588425

VOC MS (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	W204-1	W204-2	W204-3	W204-4	W204-5	W204-6
			Depth (m)	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	15/02/2021	15/02/2021	15/02/2021	15/02/2021	15/02/2021	15/02/2021
			Sample Time	.	.	.	.	.	.
			Date Received	16/02/2021	16/02/2021	16/02/2021	16/02/2021	16/02/2021	16/02/2021
			SDG Ref	210216-60	210216-60	210216-60	210216-60	210216-60	210216-60
			Lab Sample No.(s)	23732945	23732951	23732960	23732779	23732793	23732810
			AGS Reference						
Dibromofluoromethane**	%	TM116		103	94.7	114	122	105	105
Toluene-d8**	%	TM116		92.1	95.1	105	100	97	95.1
4-Bromofluorobenzene**	%	TM116		76.3	77.4	104	97.9	102	101
Methyl Tertiary Butyl Ether	<10 µg/kg	TM116		<200 M	<200 M	<200 M	<200 M	<2000 M	<2000 M
Benzene	<9 µg/kg	TM116		<180 M	<180 M	<180 M	<180 M	<1800 M	<1800 M
Toluene	<7 µg/kg	TM116		<140 M	<140 M	<140 M	<140 M	<1400 M	<1400 M
Ethylbenzene	<4 µg/kg	TM116		<80 M	<80 M	<80 M	<80 M	<800 M	<800 M
p/m-Xylene	<10 µg/kg	TM116		<200 #	<200 #	<200 #	<200 #	<2000 #	<2000 #
o-Xylene	<10 µg/kg	TM116		<200 M	<200 M	<200 M	<200 M	<2000 M	<2000 M
Naphthalene	<13 µg/kg	TM116		1340 M	3560 M	<260 M	<260 M	<2600 M	3040 M
Sum of Detected Xylenes	<0.02 mg/kg	TM116		<0.4	<0.4	<0.4	<0.4	<4	<4
Sum of BTEX	<40 µg/kg	TM116		<800	<800	<800	<800	<8000	<8000

CERTIFICATE OF ANALYSIS

SDG:	210216-60	**Client Reference:**	P18-669	**Report Number:**	588744
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	588425

VOC MS (S)

Results Legend	
#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	W204-7	W204-8	W204-9	W204-10	W204-11	W204-12
			Depth (m)	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	15/02/2021	15/02/2021	15/02/2021	15/02/2021	15/02/2021	15/02/2021
			Sample Time	.	.	.	.	.	.
			Date Received	16/02/2021	16/02/2021	16/02/2021	16/02/2021	16/02/2021	16/02/2021
			SDG Ref	210216-60	210216-60	210216-60	210216-60	210216-60	210216-60
			Lab Sample No.(s)	23732822	23732828	23732837	23732845	23732852	23732863
			AGS Reference						
Dibromofluoromethane**	%	TM116		99.8	96.3	90.7	97.5	109	95.6
Toluene-d8**	%	TM116		94.1	93.7	90.5	91.3	96.3	91.7
4-Bromofluorobenzene**	%	TM116		77.8	72.8	73.9	73.5	98.1	76.6
Methyl Tertiary Butyl Ether	<10 µg/kg	TM116		<200 M	<200 M	<200 M	<200 M	<2000 M	<200 M
Benzene	<9 µg/kg	TM116		<180 M	<180 M	<180 M	<180 M	<1800 M	<180 M
Toluene	<7 µg/kg	TM116		<140 M	<140 M	<140 M	<140 M	<1400 M	<140 M
Ethylbenzene	<4 µg/kg	TM116		<80 M	<80 M	<80 M	<80 M	<800 M	<80 M
p/m-Xylene	<10 µg/kg	TM116		<200 #	<200 #	<200 #	<200 #	<2000 #	<200 #
o-Xylene	<10 µg/kg	TM116		<200 M	<200 M	<200 M	<200 M	<2000 M	<200 M
Naphthalene	<13 µg/kg	TM116		906 M	3240 M	974 M	679 M	<2600 M	729 M
Sum of Detected Xylenes	<0.02 mg/kg	TM116		<0.4	<0.4	<0.4	<0.4	<4	<0.4
Sum of BTEX	<40 µg/kg	TM116		<800	<800	<800	<800	<8000	<800

Validated

CERTIFICATE OF ANALYSIS

SDG:	210216-60	**Client Reference:**	P18-669	**Report Number:**	588744
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	588425

VOC MS (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	W204-13	W204-14	W204-15	W204-16	W204-17	W204-18
			Depth (m)	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	15/02/2021	15/02/2021	15/02/2021	15/02/2021	15/02/2021	15/02/2021
			Sample Time	.	.	.	.	.	.
			Date Received	16/02/2021	16/02/2021	16/02/2021	16/02/2021	16/02/2021	16/02/2021
			SDG Ref	210216-60	210216-60	210216-60	210216-60	210216-60	210216-60
			Lab Sample No.(s)	23732870	23732887	23732892	23732898	23732908	23732914
			AGS Reference						
Dibromofluoromethane**	%	TM116		107	106 2	109	98	107	107
Toluene-d8**	%	TM116		98.1	98.5 2	94.3	94.2	98.3	97.8
4-Bromofluorobenzene**	%	TM116		88.5	92 2	104	79.1	93.2	90.3
Methyl Tertiary Butyl Ether	<10 µg/kg	TM116		<200 M	<200 2 M	<2000 M	<200 M	<200 M	<200 M
Benzene	<9 µg/kg	TM116		<180 M	<180 2 M	<1800 M	<180 M	<180 M	<180 M
Toluene	<7 µg/kg	TM116		<140 M	<140 2 M	<1400 M	<140 M	<140 M	<140 M
Ethylbenzene	<4 µg/kg	TM116		<80 M	<80 2 M	<800 M	<80 M	<80 M	<80 M
p/m-Xylene	<10 µg/kg	TM116		<200 #	<200 2 #	<2000 #	<200 #	<200 #	<200 #
o-Xylene	<10 µg/kg	TM116		<200 M	<200 2 M	<2000 M	<200 M	<200 M	<200 M
Naphthalene	<13 µg/kg	TM116		2990 M	724 M	<2600 M	466 M	<260 M	862 M
Sum of Detected Xylenes	<0.02 mg/kg	TM116		<0.4	<0.4 2	<4	<0.4	<0.4	<0.4
Sum of BTEX	<40 µg/kg	TM116		<800	<800 2	<8000	<800	<800	<800

CERTIFICATE OF ANALYSIS

SDG:	210216-60	**Client Reference:**	P18-669	**Report Number:**	588744
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	588425

Asbestos Identification - Solid Samples

Results Legend

#	ISO17025 accredited.
M	*m*CERTS accredited.
*	Subcontracted test.
(F)	Trigger breach confirmed
1-5&♦§@	Sample deviation (see appendix)

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthophyllite	Fibrous Tremolite	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	SPIX-2 0.20 - 0.20 SOLID 15/02/2021 00:00:00 16/02/2021 05:00:00 210216-60 23732934 TM048	23/02/2021	Marcin Magdziarek	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	W104-1 0.20 - 0.20 SOLID 15/02/2021 00:00:00 16/02/2021 05:00:00 210216-60 23732922 TM048	23/02/2021	James Richards	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	W125-1 0.20 - 0.20 SOLID 15/02/2021 00:00:00 16/02/2021 05:00:00 210216-60 23732766 TM048	23/02/2021	James Richards	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	W204-1 0.20 - 0.20 SOLID 15/02/2021 00:00:00 16/02/2021 05:00:00 210216-60 23732945 TM048	23/02/2021	Marcin Magdziarek	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	W204-3 0.20 - 0.20 SOLID 15/02/2021 00:00:00 16/02/2021 05:00:00 210216-60 23732960 TM048	23/02/2021	Agnieszka Chelmowska	Loose fibres in soil	Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	W204-5 0.20 - 0.20 SOLID 15/02/2021 00:00:00 16/02/2021 05:00:00 210216-60 23732793 TM048	23/02/2021	Agnieszka Chelmowska	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	W204-7 0.20 - 0.20 SOLID 15/02/2021 00:00:00 16/02/2021 05:00:00 210216-60 23732822 TM048	23/02/2021	Agnieszka Chelmowska	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	W204-9 0.20 - 0.20 SOLID 15/02/2021 00:00:00 16/02/2021 05:00:00 210216-60 23732837 TM048	23/02/2021	Marcin Magdziarek	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected

Validated

CERTIFICATE OF ANALYSIS

SDG:	210216-60	**Client Reference:**	P18-669	**Report Number:**	588744
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	588425

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthophyllite	Fibrous Tremolite	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	W204-11 0.20 - 0.20 SOLID 15/02/2021 00:00:00 16/02/2021 05:00:00 210216-60 23732852 TM048	23/02/2021	Agnieszka Chelmowska	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	W204-13 0.20 - 0.20 SOLID 15/02/2021 00:00:00 16/02/2021 05:00:00 210216-60 23732870 TM048	23/02/2021	Agnieszka Chelmowska	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	W204-15 0.20 - 0.20 SOLID 15/02/2021 00:00:00 16/02/2021 05:00:00 210216-60 23732892 TM048	23/02/2021	Agnieszka Chelmowska	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	W204-17 0.20 - 0.20 SOLID 15/02/2021 00:00:00 16/02/2021 05:00:00 210216-60 23732908 TM048	23/02/2021	Marcin Magdziarek	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected

CERTIFICATE OF ANALYSIS

SDG:	210216-60	**Client Reference:**	P18-669	**Report Number:**	588744
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	588425

Asbestos Quantification - Full

Results Legend

#	ISO17025 accredited.
M	*m*CERTS accredited.
*	Subcontracted test.
(F)	Trigger breach confirmed
1-5&♦§@	Sample deviation (see appendix)

		Additional Asbestos Components	Analysts Comments	Asbestos Quantification - Gravimetric - %	Asbestos Quantification - PCOM	Asbestos Quantification - Total - %
Cust. Sample Ref.	W204-3	Additional component of Chrysotile detected. (#)	Fibre bundles in soil.	0.0100 (#)	0.0060 (#)	0.016 (#)
Depth (m)	0.20 - 0.20					
Sample Type	SOLID					
Date Sampled	15/02/2021 00:00:00					
Date Received	16/02/2021 05:00:00					
SDG	210216-60					
Original Sample	23732960					
Method Number	TM304					

Table of Results - Appendix

Method No	Reference	Description
PM024	Modified BS 1377	Soil preparation including homogenisation, moisture screens of soils for Asbestos Containing Material
TM024	Method 4500A & B, AWWA/APHA, 20th Ed., 1999	Determination of Exchangeable Ammonium and Ammoniacal Nitrogen as N by titration on solids
TM048	HSG 248, Asbestos: The analysts' guide for sampling, analysis and clearance procedures	Identification of Asbestos in Bulk Material
TM062 (S)	National Grid Property Holdings Methods for the Collection & Analysis of Samples from National Grid Sites version 1 Sec 3.9	Determination of Phenols in Soils by HPLC
TM089	Modified: US EPA Methods 8020 & 602	Determination of Gasoline Range Hydrocarbons (GRO) by Headspace GC-FID (C4-C12)
TM116	Modified: US EPA Method 8260, 8120, 8020, 624, 610 & 602	Determination of Volatile Organic Compounds by Headspace / GC-MS
TM132	In - house Method	ELTRA CS800 Operators Guide
TM133	BS 1377: Part 3 1990;BS 6068-2.5	Determination of pH in Soil and Water using the GLpH pH Meter
TM153	Method 4500A,B,C, I, M AWWA/APHA, 20th Ed., 1999	Determination of Total Cyanide, Free (Easily Liberatable) Cyanide and Thiocyanate using the Skalar SANS+ System Segmented Flow Analyser
TM181	US EPA Method 6010B	Determination of Routine Metals in Soil by iCap 6500 Duo ICP-OES
TM218	Shaker extraction - EPA method 3546.	The determination of PAH in soil samples by GC-MS
TM304	HSE Contract research Report no 83/1996	Asbestos Quantification in Soil: Fibres identified by morphology only
TM414	Analysis of Petroleum Hydrocarbons in Environmental Media – Total Petroleum Hydrocarbon Criteria	Determination of Speciated Extractable Petroleum Hydrocarbons in Soils by GCxGC-FID

NA = not applicable.

Chemical testing (unless subcontracted) performed at ALS Life Sciences Ltd Hawarden (Method codes TM) or ALS Life Sciences Ltd Aberdeen (Method codes S).

CERTIFICATE OF ANALYSIS

SDG:	210216-60	**Client Reference:**	P18-669	**Report Number:**	588744
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	588425

Test Completion Dates

Lab Sample No(s)	23732928	23732934	23732940	23732922	23732766	23732878	23732945	23732951	23732960	23732779
Customer Sample Ref.	SPIX-1	SPIX-2	SPIX-3	W104-1	W125-1	W125-2	W204-1	W204-2	W204-3	W204-4
AGS Ref.										
Depth	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
Ammonium Soil by Titration	23-Feb-2021	22-Feb-2021	23-Feb-2021	23-Feb-2021	23-Feb-2021	23-Feb-2021	23-Feb-2021	23-Feb-2021	22-Feb-2021	23-Feb-2021
Asbestos ID in Solid Samples		23-Feb-2021		23-Feb-2021	23-Feb-2021		23-Feb-2021		23-Feb-2021	
Asbestos Quantification - Full									01-Mar-2021	
Cyanide Comp/Free/Total/Thiocyanate	23-Feb-2021	22-Feb-2021	22-Feb-2021	23-Feb-2021	23-Feb-2021	23-Feb-2021	23-Feb-2021	22-Feb-2021	22-Feb-2021	23-Feb-2021
EPH CWG GC (S)	19-Feb-2021	19-Feb-2021	19-Feb-2021	19-Feb-2021	19-Feb-2021	19-Feb-2021	19-Feb-2021	19-Feb-2021	19-Feb-2021	19-Feb-2021
GRO by GC-FID (S)	22-Feb-2021	22-Feb-2021	22-Feb-2021	22-Feb-2021	22-Feb-2021	22-Feb-2021	23-Feb-2021	23-Feb-2021	23-Feb-2021	23-Feb-2021
Metals in solid samples by OES	23-Feb-2021	26-Feb-2021	23-Feb-2021	25-Feb-2021	25-Feb-2021	23-Feb-2021	25-Feb-2021	23-Feb-2021	25-Feb-2021	24-Feb-2021
PAH by GCMS	22-Feb-2021	23-Feb-2021	23-Feb-2021	23-Feb-2021	22-Feb-2021	23-Feb-2021	22-Feb-2021	22-Feb-2021	23-Feb-2021	22-Feb-2021
pH	18-Feb-2021	18-Feb-2021	18-Feb-2021	18-Feb-2021	18-Feb-2021	18-Feb-2021	18-Feb-2021	18-Feb-2021	18-Feb-2021	18-Feb-2021
Phenols by HPLC (S)	23-Feb-2021	19-Feb-2021	23-Feb-2021	22-Feb-2021	19-Feb-2021	23-Feb-2021	22-Feb-2021	22-Feb-2021	19-Feb-2021	23-Feb-2021
Sample description	17-Feb-2021	17-Feb-2021	17-Feb-2021	17-Feb-2021	17-Feb-2021	17-Feb-2021	17-Feb-2021	17-Feb-2021	17-Feb-2021	17-Feb-2021
Total Organic Carbon	19-Feb-2021	23-Feb-2021	19-Feb-2021	23-Feb-2021	23-Feb-2021	23-Feb-2021	23-Feb-2021	23-Feb-2021	23-Feb-2021	23-Feb-2021
TPH CWG GC (S)	22-Feb-2021	22-Feb-2021	22-Feb-2021	22-Feb-2021	22-Feb-2021	22-Feb-2021	23-Feb-2021	23-Feb-2021	23-Feb-2021	23-Feb-2021
VOC MS (S)	21-Feb-2021	21-Feb-2021	21-Feb-2021	21-Feb-2021	21-Feb-2021	21-Feb-2021	21-Feb-2021	21-Feb-2021	21-Feb-2021	21-Feb-2021

Lab Sample No(s)	23732793	23732810	23732822	23732828	23732837	23732845	23732852	23732863	23732870	23732887
Customer Sample Ref.	W204-5	W204-6	W204-7	W204-8	W204-9	W204-10	W204-11	W204-12	W204-13	W204-14
AGS Ref.										
Depth	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
Ammonium Soil by Titration	23-Feb-2021	22-Feb-2021	23-Feb-2021	23-Feb-2021	22-Feb-2021	22-Feb-2021	23-Feb-2021	22-Feb-2021	23-Feb-2021	22-Feb-2021
Asbestos ID in Solid Samples	23-Feb-2021		23-Feb-2021		23-Feb-2021		23-Feb-2021		23-Feb-2021	
Cyanide Comp/Free/Total/Thiocyanate	23-Feb-2021	22-Feb-2021	22-Feb-2021	23-Feb-2021	22-Feb-2021	22-Feb-2021	23-Feb-2021	23-Feb-2021	22-Feb-2021	23-Feb-2021
EPH CWG GC (S)	19-Feb-2021	19-Feb-2021	19-Feb-2021	19-Feb-2021	19-Feb-2021	19-Feb-2021	19-Feb-2021	19-Feb-2021	19-Feb-2021	19-Feb-2021
GRO by GC-FID (S)	23-Feb-2021	23-Feb-2021	23-Feb-2021	23-Feb-2021	23-Feb-2021	23-Feb-2021	23-Feb-2021	23-Feb-2021	23-Feb-2021	23-Feb-2021
Metals in solid samples by OES	25-Feb-2021	23-Feb-2021	25-Feb-2021	23-Feb-2021	25-Feb-2021	23-Feb-2021	25-Feb-2021	23-Feb-2021	25-Feb-2021	25-Feb-2021
PAH by GCMS	23-Feb-2021	22-Feb-2021	22-Feb-2021	23-Feb-2021	22-Feb-2021	23-Feb-2021	23-Feb-2021	23-Feb-2021	22-Feb-2021	23-Feb-2021
pH	18-Feb-2021	18-Feb-2021	18-Feb-2021	18-Feb-2021	18-Feb-2021	18-Feb-2021	18-Feb-2021	18-Feb-2021	18-Feb-2021	18-Feb-2021
Phenols by HPLC (S)	23-Feb-2021	19-Feb-2021	22-Feb-2021	19-Feb-2021	22-Feb-2021	22-Feb-2021	19-Feb-2021	23-Feb-2021	22-Feb-2021	19-Feb-2021
Sample description	17-Feb-2021	17-Feb-2021	17-Feb-2021	17-Feb-2021	17-Feb-2021	17-Feb-2021	17-Feb-2021	17-Feb-2021	17-Feb-2021	17-Feb-2021
Total Organic Carbon	23-Feb-2021	23-Feb-2021	23-Feb-2021	23-Feb-2021	19-Feb-2021	23-Feb-2021	23-Feb-2021	23-Feb-2021	23-Feb-2021	23-Feb-2021
TPH CWG GC (S)	23-Feb-2021	23-Feb-2021	23-Feb-2021	23-Feb-2021	23-Feb-2021	23-Feb-2021	23-Feb-2021	23-Feb-2021	23-Feb-2021	23-Feb-2021
VOC MS (S)	23-Feb-2021	23-Feb-2021	21-Feb-2021	21-Feb-2021	21-Feb-2021	21-Feb-2021	23-Feb-2021	21-Feb-2021	21-Feb-2021	23-Feb-2021

Lab Sample No(s)	23732892	23732898	23732908	23732914
Customer Sample Ref.	W204-15	W204-16	W204-17	W204-18
AGS Ref.				
Depth	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
Ammonium Soil by Titration	22-Feb-2021	23-Feb-2021	23-Feb-2021	23-Feb-2021
Asbestos ID in Solid Samples	23-Feb-2021		23-Feb-2021	
Cyanide Comp/Free/Total/Thiocyanate	22-Feb-2021	22-Feb-2021	22-Feb-2021	23-Feb-2021
EPH CWG GC (S)	19-Feb-2021	19-Feb-2021	19-Feb-2021	19-Feb-2021
GRO by GC-FID (S)	23-Feb-2021	23-Feb-2021	22-Feb-2021	22-Feb-2021
Metals in solid samples by OES	25-Feb-2021	23-Feb-2021	23-Feb-2021	24-Feb-2021
PAH by GCMS	23-Feb-2021	22-Feb-2021	23-Feb-2021	23-Feb-2021
pH	18-Feb-2021	18-Feb-2021	18-Feb-2021	18-Feb-2021
Phenols by HPLC (S)	23-Feb-2021	23-Feb-2021	19-Feb-2021	22-Feb-2021
Sample description	17-Feb-2021	17-Feb-2021	17-Feb-2021	17-Feb-2021
Total Organic Carbon	23-Feb-2021	23-Feb-2021	23-Feb-2021	23-Feb-2021
TPH CWG GC (S)	23-Feb-2021	23-Feb-2021	22-Feb-2021	22-Feb-2021
VOC MS (S)	23-Feb-2021	21-Feb-2021	21-Feb-2021	21-Feb-2021

Appendix General

1. Results are expressed on a dry weight basis (dried at 35ºC) for all soil analyses except for the following: NRA and CEN Leach tests, flash point LOI, pH, ammonium as NH4 by the BRE method, VOC TICs and SVOC TICs.

2. If sufficient sample is received a sub sample will be retained free of charge for 30 days after analysis is completed (e-mailed) for all sample types unless the sample is destroyed on testing. The prepared soil sub sample that is analysed for asbestos will be retained for a period of 6 months after the analysis date. All bulk samples will be retained for a period of 6 months after the analysis date. All samples received and not scheduled will be disposed of one month after the date of receipt unless we are instructed to the contrary. Once the initial period has expired, a storage charge will be applied for each month or part thereof until the client cancels the request for sample storage. ALS reserve the right to charge for samples received and stored but not analysed.

3. With respect to turnaround, we will always endeavour to meet client requirements wherever possible, but turnaround times cannot be absolutely guaranteed due to so many variables beyond our control.

4. We take responsibility for any test performed by sub-contractors (marked with an asterisk). We endeavour to use UKAS/MCERTS Accredited Laboratories, who either complete a quality questionnaire or are audited by ourselves. For some determinands there are no UKAS/MCERTS Accredited Laboratories, in this instance a laboratory with a known track record will be utilised.

5. If no separate volatile sample is supplied by the client, or if a headspace or sediment is present in the volatile sample, the integrity of the data may be compromised. This will be flagged up as an invalid VOC on the test schedule and the result marked as deviating on the test certificate.

6. NDP - No determination possible due to insufficient/unsuitable sample.

7. Results relate only to the items tested.

8. LoDs (Limit of Detection) for wet tests reported on a dry weight basis are not corrected for moisture content.

9. **Surrogate recoveries** - Surrogates are added to your sample to monitor recovery of the test requested. A % recovery is reported, results are not corrected for the recovery measured. Typical recoveries for organics tests are 70-130%. Recoveries in soils are affected by organic rich or clay rich matrices. Waters can be affected by remediation fluids or high amounts of sediment. Test results are only ever reported if all of the associated quality checks pass; it is assumed that all recoveries outside of the values above are due to matrix affect.

10. Stones/debris are not routinely removed. We always endeavour to take a representative sub sample from the received sample.

11. In certain circumstances the method detection limit may be elevated due to the sample being outside the calibration range. Other factors that may contribute to this include possible interferences. In both cases the sample would be diluted which would cause the method detection limit to be raised.

12. Mercury results quoted on soils will not include volatile mercury as the analysis is performed on a dried and crushed sample.

13. For leachate preparations other than Zero Headspace Extraction (ZHE) volatile loss may occur.

14. For the BSEN 12457-3 two batch process to allow the cumulative release to be calculated, the volume of the leachate produced is measured and filtered for all tests. We therefore cannot carry out any unfiltered analysis. The tests affected include volatiles GCFID/GCMS and all subcontracted analysis.

15. Analysis and identification of specific compounds using GCFID is by retention time only, and we routinely calibrate and quantify for benzene, toluene, ethylbenzenes and xylenes (BTEX). For total volatiles in the C5-C12 range, the total area of the chromatogram is integrated and expressed as ug/kg or ug/l. Although this analysis is commonly used for the quantification of gasoline range organics (GRO), the system will also detect other compounds such as chlorinated solvents, and this may lead to a falsely high result with respect to hydrocarbons only. It is not possible to specifically identify these non-hydrocarbons, as standards are not routinely run for any other compounds, and for more definitive identification, volatiles by GCMS should be utilised.

16. We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample. Other coarse granular material such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

17. **Tentatively Identified Compounds (TICs)** are non-target peaks in VOC and SVOC analysis. All non-target peaks detected with a concentration above the LoD are subjected to a mass spectral library search. Non-target peaks with a library search confidence of >75% are reported based on the best mass spectral library match. When a non-target peak with a library search confidence of <75% is detected it is reported as "mixed hydrocarbons". Non-target compounds identified from the scan data are semi-quantified relative to one of the deuterated internal standards, under the same chromatographic conditions as the target compounds. This result is reported as a semi-quantitative value and reported as Tentatively Identified Compounds (TICs). TICs are outside the scope of UKAS accreditation and are not moisture corrected.

18. **Sample Deviations**

If a sample is classed as deviated then the associated results may be compromised.

1	**Container with Headspace provided for volatiles analysis**
2	**Incorrect container received**
3	**Deviation from method**
4	**Matrix interference**
♦	**Sample holding time exceeded in laboratory**
@	**Sample holding time exceeded due to late arrival of instructions or samples**
§	**Sampled on date not provided**

19. **Asbestos**

When requested, the individual sub sample scheduled will be analysed in house for the presence of asbestos fibres and asbestos containing material by our documented in house method TM048 based on HSG 248 (2005), which is accredited to ISO17025. If a specific asbestos fibre type is not found this will be reported as "Not detected". If no asbestos fibre types are found all will be reported as "Not detected" and the sub sample analysed deemed to be clear of asbestos. If an asbestos fibre type is found it will be reported as detected (for each fibre type found). Testing can be carried out on asbestos positive samples, but, due to Health and Safety considerations, may be replaced by alternative tests or reported as No Determination Possible (NDP). The quantity of asbestos present is not determined unless specifically requested.

Identification of Asbestos in Bulk Materials & Soils

The results for identification of asbestos in bulk materials are obtained from supplied bulk materials which have been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

The results for identification of asbestos in soils are obtained from a homogenised sub sample which has been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

Asbestos Type	Common Name
Chrysotile	White Asbestos
Amosite	Brown Asbestos
Crocidolite	Blue Asbestos
Fibrous Actinolite	-
Fibrous Anthophyllite	-
Fibrous Tremolite	-

Visual Estimation Of Fibre Content

Estimation of fibre content is not permitted as part of our UKAS accredited test other than: - Trace - Where only one or two asbestos fibres were identified.

Respirable Fibres

Respirable fibres are defined as fibres of <3 µm diameter, longer than 5 µm and with aspect ratios of at least 3:1 that can be inhaled into the lower regions of the lung and are generally acknowledged to be most important predictor of hazard and risk for cancers of the lung.
Standing Committee of Analysts, *The Quantification of Asbestos in Soil (2017).*

Further guidance on typical asbestos fibre content of manufactured products can be found in HSG 264.

The identification of asbestos containing materials and soils falls within our schedule of tests for which we hold UKAS accreditation, however opinions, interpretations and all other information contained in the report are outside the scope of UKAS accreditation.

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Rodgers Leask
Office 225
2430/2440
Aztec West
Almondsbury
Bristol
BS32 4QA

Attention: Elliot Thomas

CERTIFICATE OF ANALYSIS

Date of report Generation:	25 February 2021
Customer:	Rodgers Leask
Sample Delivery Group (SDG):	210217-69
Your Reference:	P18-669
Location:	Llanwern
Report No:	588256

We received 13 samples on Wednesday February 17, 2021 and 13 of these samples were scheduled for analysis which was completed on Thursday February 25, 2021. Accredited laboratory tests are defined within the report, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation.

Should this report require incorporation into client reports, it must be used in its entirety and not simply with the data sections alone.

Chemical testing (unless subcontracted) performed at ALS Life Sciences Ltd Hawarden (Method codes TM) or ALS Life Sciences Ltd Aberdeen (Method codes S).

All sample data is provided by the customer. The reported results relate to the sample supplied, and on the basis that this data is correct.
Incorrect sampling dates and/or sample information will affect the validity of results.
The customer is not permitted to reproduce this report except in full without the approval of the laboratory.

Approved By:

Sonia McWhan

Operations Manager

CERTIFICATE OF ANALYSIS

SDG:	210217-69	**Client Reference:**	P18-669	**Report Number:**	588256
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
23740650	SPDL-1		0.20 - 0.20	15/02/2021
23740666	SPDL-2		0.20 - 0.20	15/02/2021
23740683	SPJB-1		0.20 - 0.20	15/02/2021
23740687	SPJB-2		0.20 - 0.20	15/02/2021
23740693	SPJB-3		0.20 - 0.20	15/02/2021
23740604	W106-1		0.20 - 0.20	15/02/2021
23740671	W177-1		0.20 - 0.20	15/02/2021
23740678	W177-2		0.20 - 0.20	15/02/2021
23740700	W191-1		0.20 - 0.20	15/02/2021
23740611	W192-1		0.20 - 0.20	15/02/2021
23740619	W192-2		0.20 - 0.20	15/02/2021
23740629	W204-19		0.20 - 0.20	15/02/2021
23740639	W204-20		0.20 - 0.20	15/02/2021

Only received samples which have had analysis scheduled will be shown on the following pages.

Validated

CERTIFICATE OF ANALYSIS

SDG:	210217-69	**Client Reference:**	P18-669	**Report Number:**	588256
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	

Results Legend

X Test

N No Determination Possible

Sample Types -

S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

Lab Sample No(s)			23740650		23740666		23740683		23740687		23740693		23740604		23740671		23740678	
Customer Sample Reference			SPDL-1		SPDL-2		SPJB-1		SPJB-2		SPJB-3		W106-1		W177-1		W177-2	
AGS Reference																		
Depth (m)			0.20 - 0.20		0.20 - 0.20		0.20 - 0.20		0.20 - 0.20		0.20 - 0.20		0.20 - 0.20		0.20 - 0.20		0.20 - 0.20	
Container			250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)
Sample Type			S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
Ammonium Soil by Titration	All	NDPs: 0 Tests: 13	X			X		X			X		X			X		X		X
Asbestos ID in Solid Samples	All	NDPs: 0 Tests: 7			X					X					X				X	
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 13	X			X		X			X		X			X		X		X
EPH CWG GC (S)	All	NDPs: 0 Tests: 13	X			X		X			X		X			X		X		X
GRO by GC-FID (S)	All	NDPs: 0 Tests: 13		X			X		X			X		X			X		X	
Metals in solid samples by OES	All	NDPs: 0 Tests: 13	X			X		X			X		X			X		X		X
PAH by GCMS	All	NDPs: 0 Tests: 13	X			X		X			X		X			X		X		X
pH	All	NDPs: 0 Tests: 13	X			X		X			X		X			X		X		X
Phenols by HPLC (S)	All	NDPs: 0 Tests: 13	X			X		X			X		X			X		X		X
Sample description	All	NDPs: 0 Tests: 13	X			X		X			X		X			X		X		X
Total Organic Carbon	All	NDPs: 0 Tests: 13	X			X		X			X		X			X		X		X
TPH CWG GC (S)	All	NDPs: 0 Tests: 13	X			X		X			X		X			X		X		X
VOC MS (S)	All	NDPs: 0 Tests: 13		X			X		X			X		X			X		X	

23740639	W204-20		0.20 - 0.20	60g VOC (ALE215)	S		
				250g Amber Jar (ALE210)	S	X	
				1kg TUB with Handle (ALE260)	S		X
				60g VOC (ALE215)	S		X
23740629	W204-19		0.20 - 0.20	250g Amber Jar (ALE210)	S	X	
				1kg TUB with Handle (ALE260)	S		X
				60g VOC (ALE215)	S		X
23740619	W192-2		0.20 - 0.20	250g Amber Jar (ALE210)	S	X	
				1kg TUB with Handle (ALE260)	S		X
				60g VOC (ALE215)	S		X
23740611	W192-1		0.20 - 0.20	250g Amber Jar (ALE210)	S	X	
				60g VOC (ALE215)	S		X
23740700	W191-1		0.20 - 0.20	250g Amber Jar (ALE210)	S	X	
				1kg TUB with Handle (ALE260)	S		X
				60g VOC (ALE215)	S		X
23740678	W177-2		0.20 - 0.20	250g Amber Jar (ALE210)	S	X	
				1kg TUB with Handle (ALE260)	S		X
				60g VOC (ALE215)	S		X

CERTIFICATE OF ANALYSIS

SDG:	210217-69	**Client Reference:**	P18-669	**Report Number:**	588256
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	

Sample Descriptions

Grain Sizes

very fine	<0.063mm	**fine**	0.063mm - 0.1mm	**medium**	0.1mm - 2mm	**coarse**	2mm - 10mm	**very coarse**	>10mm

Lab Sample No(s)	Customer Sample Ref.	Depth (m)	Colour	Description	Inclusions	Inclusions 2
23740650	SPDL-1	0.20 - 0.20	Dark Brown	Sandy Loam	Stones	Vegetation
23740666	SPDL-2	0.20 - 0.20	Dark Brown	Sandy Loam	Stones	Vegetation
23740683	SPJB-1	0.20 - 0.20	Dark Brown	Loamy Sand	Stones	Vegetation
23740687	SPJB-2	0.20 - 0.20	Dark Brown	Loamy Sand	Stones	Vegetation
23740693	SPJB-3	0.20 - 0.20	Dark Brown	Loamy Sand	Stones	Vegetation
23740604	W106-1	0.20 - 0.20	Dark Brown	Sandy Loam	Stones	Vegetation
23740671	W177-1	0.20 - 0.20	Dark Brown	Sandy Loam	Stones	Vegetation
23740678	W177-2	0.20 - 0.20	Dark Brown	Sandy Loam	Stones	Vegetation
23740700	W191-1	0.20 - 0.20	Dark Brown	Sandy Loam	Stones	Vegetation
23740611	W192-1	0.20 - 0.20	Dark Brown	Sandy Loam	Stones	Vegetation
23740619	W192-2	0.20 - 0.20	Dark Brown	Sandy Loam	Stones	Vegetation
23740629	W204-19	0.20 - 0.20	Dark Brown	Sandy Loam	Stones	Vegetation
23740639	W204-20	0.20 - 0.20	Dark Brown	Sandy Loam	Stones	None

These descriptions are only intended to act as a cross check if sample identities are questioned, and to provide a log of sample matrices with respect to MCERTS validation. They are not intended as full geological descriptions.

We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally ocurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample.

Other coarse granular materials such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

Validated

CERTIFICATE OF ANALYSIS

SDG:	210217-69	**Client Reference:**	P18-669	**Report Number:**	588256
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	SPDL-1	SPDL-2	SPJB-1	SPJB-2	SPJB-3	W106-1
			Depth (m)	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	15/02/2021	15/02/2021	15/02/2021	15/02/2021	15/02/2021	15/02/2021
			Sample Time	.	.	.	.	.	.
			Date Received	17/02/2021	17/02/2021	17/02/2021	17/02/2021	17/02/2021	17/02/2021
			SDG Ref	210217-69	210217-69	210217-69	210217-69	210217-69	210217-69
			Lab Sample No.(s)	23740650	23740666	23740683	23740687	23740693	23740604
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		7.3	10	7.8	8.7	11	17
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	<12 M	<12 M	<12 M	<12 M	<12 M
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	0.0217 M	<0.01 M	<0.01 M	<0.01 M
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M
Soil Organic Matter (SOM)	<0.35 %	TM132		15.9 #	20.7 #	3.81 #	35.5 #	52.6 #	4.97 #
pH	1 pH Units	TM133		9.22 M	9.51 M	12.8 M	10.6 M	9.09 M	9.83 M
Cyanide, Total	<1 mg/kg	TM153		<1 M	<1 M	<1 M	1.23 M	2.62 M	<1 M
Arsenic	<0.6 mg/kg	TM181		10.4 M	8.01 M	<6 M	2.6 M	5.24 M	10.5 M
Cadmium	<0.02 mg/kg	TM181		<0.02 M	<0.02 M	<0.2 M	<0.02 M	<0.02 M	0.0526 M
Chromium	<0.9 mg/kg	TM181		144 M	30.7 M	398 M	301 M	164 M	52.9 M
Copper	<1.4 mg/kg	TM181		14.6 M	12.8 M	28 M	7.04 M	18.2 M	18.4 M
Iron	<1000 mg/kg	TM181		44300 #	19500 #	142000 #	131000 #	96200 #	61800 #
Lead	<0.7 mg/kg	TM181		17.6 M	8.89 M	22.2 M	<0.7 M	14.8 M	93 M
Manganese	<0.13 mg/kg	TM181		9390 M	3080 M	46900 M	23400 M	18900 M	7400 M
Mercury	<0.1 mg/kg	TM181		<0.1 M	<0.1 M	<1 M	<0.1 M	<0.1 M	0.355 M
Nickel	<0.2 mg/kg	TM181		12.7 M	9.22 M	14.1 M	0.802 M	18.3 M	15.7 M
Selenium	<1 mg/kg	TM181		3.41 #	1.75 #	22 #	4.55 #	7.23 #	2.89 #
Vanadium	<0.2 mg/kg	TM181		79.3 #	25.6 #	662 #	284 #	219 #	125 #
Zinc	<1.9 mg/kg	TM181		85.5 M	90.7 M	110 M	41.1 M	78.6 M	443 M

Validated

CERTIFICATE OF ANALYSIS

SDG:	210217-69	**Client Reference:**	P18-669	**Report Number:**	588256
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	W177-1	W177-2	W191-1	W192-1	W192-2	W204-19
			Depth (m)	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	15/02/2021	15/02/2021	15/02/2021	15/02/2021	15/02/2021	15/02/2021
			Sample Time	.	.	.	.	.	.
			Date Received	17/02/2021	17/02/2021	17/02/2021	17/02/2021	17/02/2021	17/02/2021
			SDG Ref	210217-69	210217-69	210217-69	210217-69	210217-69	210217-69
			Lab Sample No.(s)	23740671	23740678	23740700	23740611	23740619	23740629
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		12	13	13	13	13	21
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	<12 M	<12 M	<12 M	<12 M	<12 M
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M
Soil Organic Matter (SOM)	<0.35 %	TM132		49.7 #	25 #	13.9 #	7.86 #	6.5 #	12.9 #
pH	1 pH Units	TM133		9.19 M	8.79 M	9.02 M	8.87 M	8.75 M	9.41 M
Cyanide, Total	<1 mg/kg	TM153		<1 M	<1 M	<1 M	<1 M	<1 M	1.25 M
Arsenic	<0.6 mg/kg	TM181		10.6 M	9.39 M	10.4 M	11.6 M	9.5 M	8.67 M
Cadmium	<0.02 mg/kg	TM181		<0.2 M	0.342 M	<0.02 M	<0.02 M	<0.02 M	<0.02 M
Chromium	<0.9 mg/kg	TM181		40.1 M	66.6 M	98 M	45.9 M	64.6 M	162 M
Copper	<1.4 mg/kg	TM181		24.7 M	84.2 M	18.8 M	16.8 M	14.1 M	19.4 M
Iron	<1000 mg/kg	TM181		88600 #	121000 #	87900 #	88800 #	69600 #	121000 #
Lead	<0.7 mg/kg	TM181		85.1 M	90.5 M	101 M	69.3 M	70.1 M	119 M
Manganese	<0.13 mg/kg	TM181		3570 M	3910 M	9370 M	5290 M	4380 M	11600 M
Mercury	<0.1 mg/kg	TM181		<1 M	<1 M	0.265 M	<0.1 M	0.103 M	<0.1 M
Nickel	<0.2 mg/kg	TM181		25.4 M	26 M	19 M	15.9 M	17.9 M	17.8 M
Selenium	<1 mg/kg	TM181		<10 #	<10 #	3.13 #	<1 #	<1 #	1.71 #
Vanadium	<0.2 mg/kg	TM181		78.7 #	59.1 #	279 #	86.9 #	141 #	398 #
Zinc	<1.9 mg/kg	TM181		235 M	285 M	378 M	314 M	289 M	453 M

Validated

CERTIFICATE OF ANALYSIS

SDG:	210217-69	**Client Reference:**	P18-669	**Report Number:**	588256
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Customer Sample Ref.	W204-20
Depth (m)	0.20 - 0.20
Sample Type	Soil/Solid (S)
Date Sampled	15/02/2021
Sample Time	.
Date Received	17/02/2021
SDG Ref	210217-69
Lab Sample No.(s)	23740639
AGS Reference	

Component	LOD/Units	Method	
Moisture Content Ratio (% of as received sample)	%	PM024	14
Exchangeable Ammonia as N	<12 mg/kg	TM024	<12 M
Phenol	<0.01 mg/kg	TM062 (S)	<0.01 M
Cresols	<0.01 mg/kg	TM062 (S)	<0.01 M
Xylenols	<0.015 mg/kg	TM062 (S)	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)	<0.035 M
Soil Organic Matter (SOM)	<0.35 %	TM132	6.83 #
pH	1 pH Units	TM133	9.27 M
Cyanide, Total	<1 mg/kg	TM153	<1 M
Arsenic	<0.6 mg/kg	TM181	11.3 M
Cadmium	<0.02 mg/kg	TM181	0.321 M
Chromium	<0.9 mg/kg	TM181	90.4 M
Copper	<1.4 mg/kg	TM181	22.9 M
Iron	<1000 mg/kg	TM181	77600 #
Lead	<0.7 mg/kg	TM181	106 M
Manganese	<0.13 mg/kg	TM181	8500 M
Mercury	<0.1 mg/kg	TM181	<0.1 M
Nickel	<0.2 mg/kg	TM181	23.5 M
Selenium	<1 mg/kg	TM181	3 #
Vanadium	<0.2 mg/kg	TM181	157 #
Zinc	<1.9 mg/kg	TM181	429 M

Validated

CERTIFICATE OF ANALYSIS

SDG:	210217-69	**Client Reference:**	P18-669	**Report Number:**	588256
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	

PAH by GCMS

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	SPDL-1	SPDL-2	SPJB-1	SPJB-2	SPJB-3	W106-1
			Depth (m)	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	15/02/2021	15/02/2021	15/02/2021	15/02/2021	15/02/2021	15/02/2021
			Sample Time	.	.	.	.	.	.
			Date Received	17/02/2021	17/02/2021	17/02/2021	17/02/2021	17/02/2021	17/02/2021
			SDG Ref	210217-69	210217-69	210217-69	210217-69	210217-69	210217-69
			Lab Sample No.(s)	23740650	23740666	23740683	23740687	23740693	23740604
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		94.8	93	97.3	94.9	97.2	94.4
Acenaphthene-d10 % recovery**	%	TM218		89.8	89.7	96	92.9	97.3	91.5
Phenanthrene-d10 % recovery**	%	TM218		88.5	89.8	97.3	91.6	97.2	91.6
Chrysene-d12 % recovery**	%	TM218		85.6	91.7	85.3	89.7	80	82.8
Perylene-d12 % recovery**	%	TM218		85	90.2	81.4	90.3	72.7	87.3
Naphthalene	<9 µg/kg	TM218		419 M	512 M	169 M	432 M	919 M	280 M
Acenaphthylene	<12 µg/kg	TM218		642 M	587 M	50.7 M	541 M	1660 M	43 M
Acenaphthene	<8 µg/kg	TM218		30.5 M	37.4 M	228 M	49.7 M	89.7 M	13.2 M
Fluorene	<10 µg/kg	TM218		174 M	252 M	123 M	138 M	542 M	34 M
Phenanthrene	<15 µg/kg	TM218		2380 M	2620 M	2270 M	1760 M	6360 M	201 M
Anthracene	<16 µg/kg	TM218		561 M	734 M	441 M	517 M	1920 M	68.5 M
Fluoranthene	<17 µg/kg	TM218		6150 M	6520 M	4710 M	4050 M	15600 M	415 M
Pyrene	<15 µg/kg	TM218		4600 M	5000 M	4150 M	3040 M	10700 M	362 M
Benz(a)anthracene	<14 µg/kg	TM218		2860 M	3570 M	2380 M	2270 M	6690 M	216 M
Chrysene	<10 µg/kg	TM218		2420 M	2990 M	2790 M	1960 M	6140 M	219 M
Benzo(b)fluoranthene	<15 µg/kg	TM218		4510 M	5330 M	4030 M	3710 M	8580 M	340 M
Benzo(k)fluoranthene	<14 µg/kg	TM218		1440 M	1740 M	1480 M	1150 M	3040 M	127 M
Benzo(a)pyrene	<15 µg/kg	TM218		2620 M	3500 M	2770 M	2170 M	5940 M	222 M
Indeno(1,2,3-cd)pyrene	<18 µg/kg	TM218		2550 M	3180 M	2150 M	2230 M	5100 M	217 M
Dibenzo(a,h)anthracene	<23 µg/kg	TM218		508 M	614 M	401 M	458 M	1040 M	38.5 M
Benzo(g,h,i)perylene	<24 µg/kg	TM218		2020 M	2610 M	1930 M	1790 M	4450 M	195 M
PAH, Total Detected USEPA 16	<118 µg/kg	TM218		33900	39800	30100	26300	78800	2990

Validated

CERTIFICATE OF ANALYSIS

SDG:	210217-69	**Client Reference:**	P18-669	**Report Number:**	588256
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	

PAH by GCMS

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	W177-1	W177-2	W191-1	W192-1	W192-2	W204-19
			Depth (m)	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	15/02/2021	15/02/2021	15/02/2021	15/02/2021	15/02/2021	15/02/2021
			Sample Time	.	.	.	.	.	.
			Date Received	17/02/2021	17/02/2021	17/02/2021	17/02/2021	17/02/2021	17/02/2021
			SDG Ref	210217-69	210217-69	210217-69	210217-69	210217-69	210217-69
			Lab Sample No.(s)	23740671	23740678	23740700	23740611	23740619	23740629
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		90.4	96	92.4	90.4	95.7	95.7
Acenaphthene-d10 % recovery**	%	TM218		84	92.4	87.6	87.4	89.6	89.3
Phenanthrene-d10 % recovery**	%	TM218		82.1	91.4	85.8	86.4	82.6	84
Chrysene-d12 % recovery**	%	TM218		80.5	94.4	83.2	86.9	72.1	75.4
Perylene-d12 % recovery**	%	TM218		81.1	92.6	81.6	88.2	75.6	74.7
Naphthalene	<9 µg/kg	TM218		624 M	519 M	383 M	342 M	242 M	443 M
Acenaphthylene	<12 µg/kg	TM218		1020 M	968 M	233 M	441 M	138 M	165 M
Acenaphthene	<8 µg/kg	TM218		70 M	42.4 M	37.1 M	30.1 M	17.9 M	41.3 M
Fluorene	<10 µg/kg	TM218		371 M	312 M	129 M	404 M	94.3 M	173 M
Phenanthrene	<15 µg/kg	TM218		3190 M	2830 M	1210 M	3340 M	655 M	1030 M
Anthracene	<16 µg/kg	TM218		1060 M	1320 M	344 M	858 M	204 M	290 M
Fluoranthene	<17 µg/kg	TM218		10500 M	10500 M	2140 M	5110 M	1270 M	1680 M
Pyrene	<15 µg/kg	TM218		7760 M	7570 M	1590 M	3490 M	873 M	1150 M
Benz(a)anthracene	<14 µg/kg	TM218		5150 M	5200 M	1160 M	1940 M	551 M	656 M
Chrysene	<10 µg/kg	TM218		4410 M	4350 M	1080 M	1690 M	543 M	659 M
Benzo(b)fluoranthene	<15 µg/kg	TM218		8690 M	7780 M	1770 M	2530 M	807 M	887 M
Benzo(k)fluoranthene	<14 µg/kg	TM218		2490 M	2630 M	572 M	789 M	257 M	277 M
Benzo(a)pyrene	<15 µg/kg	TM218		5120 M	4830 M	1030 M	1580 M	497 M	435 M
Indeno(1,2,3-cd)pyrene	<18 µg/kg	TM218		5140 M	4470 M	1080 M	1420 M	386 M	384 M
Dibenzo(a,h)anthracene	<23 µg/kg	TM218		990 M	887 M	216 M	278 M	78.3 M	<23 M
Benzo(g,h,i)perylene	<24 µg/kg	TM218		3920 M	3420 M	816 M	1070 M	385 M	319 M
PAH, Total Detected USEPA 16	<118 µg/kg	TM218		60500	57600	13800	25300	7000	8580

Validated

CERTIFICATE OF ANALYSIS

SDG:	210217-69	**Client Reference:**	P18-669	**Report Number:**	588256
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	

PAH by GCMS

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Customer Sample Ref.	W204-20
Depth (m)	0.20 - 0.20
Sample Type	Soil/Solid (S)
Date Sampled	15/02/2021
Sample Time	.
Date Received	17/02/2021
SDG Ref	210217-69
Lab Sample No.(s)	23740639
AGS Reference	

Component	LOD/Units	Method	
Naphthalene-d8 % recovery**	%	TM218	91.9
Acenaphthene-d10 % recovery**	%	TM218	91.4
Phenanthrene-d10 % recovery**	%	TM218	90.2
Chrysene-d12 % recovery**	%	TM218	86.9
Perylene-d12 % recovery**	%	TM218	83.8
Naphthalene	<9 µg/kg	TM218	492 M
Acenaphthylene	<12 µg/kg	TM218	317 M
Acenaphthene	<8 µg/kg	TM218	42.1 M
Fluorene	<10 µg/kg	TM218	196 M
Phenanthrene	<15 µg/kg	TM218	1570 M
Anthracene	<16 µg/kg	TM218	523 M
Fluoranthene	<17 µg/kg	TM218	3560 M
Pyrene	<15 µg/kg	TM218	2570 M
Benz(a)anthracene	<14 µg/kg	TM218	1820 M
Chrysene	<10 µg/kg	TM218	1550 M
Benzo(b)fluoranthene	<15 µg/kg	TM218	2560 M
Benzo(k)fluoranthene	<14 µg/kg	TM218	844 M
Benzo(a)pyrene	<15 µg/kg	TM218	1520 M
Indeno(1,2,3-cd)pyrene	<18 µg/kg	TM218	1390 M
Dibenzo(a,h)anthracene	<23 µg/kg	TM218	292 M
Benzo(g,h,i)perylene	<24 µg/kg	TM218	1120 M
PAH, Total Detected USEPA 16	<118 µg/kg	TM218	20400

Validated

CERTIFICATE OF ANALYSIS

SDG:	210217-69	**Client Reference:**	P18-669	**Report Number:**	588256
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	

TPH CWG (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	SPDL-1	SPDL-2	SPJB-1	SPJB-2	SPJB-3	W106-1
			Depth (m)	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	15/02/2021	15/02/2021	15/02/2021	15/02/2021	15/02/2021	15/02/2021
			Sample Time	.	.	.	.	.	.
			Date Received	17/02/2021	17/02/2021	17/02/2021	17/02/2021	17/02/2021	17/02/2021
			SDG Ref	210217-69	210217-69	210217-69	210217-69	210217-69	210217-69
			Lab Sample No.(s)	23740650	23740666	23740683	23740687	23740693	23740604
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		56.6 4	45.6 4	116	51.3 4	54.3 4	74.6
Aliphatics >C5-C6	<10 µg/kg	TM089		<10 4	<10 4	<10	<10 4	<10 4	<10
Aliphatics >C6-C8	<10 µg/kg	TM089		<10 4	<10 4	<10	<10 4	<10 4	19.2
Aliphatics >C8-C10	<10 µg/kg	TM089		<10 4	<10 4	<10	<10 4	<10 4	43.2
Aliphatics >C10-C12	<1000 µg/kg	TM414		<1000	<1000	<1000	<1000	<1000	<1000
Aliphatics >C12-C16	<1000 µg/kg	TM414		<1000	<1000	<1000	1030	<1000	<1000
Aliphatics >C16-C21	<1000 µg/kg	TM414		1550	<1000	12600	3470	3680	3980
Aliphatics >C21-C35	<1000 µg/kg	TM414		4740	3230	78600	16000	12400	26000
Aliphatics >C35-C44	<1000 µg/kg	TM414		<1000	<1000	28500	1420	1510	10000
Total Aliphatics >C10-C44	<5000 µg/kg	TM414		7000	<5000	121000	22200	18400	40400
Total Aliphatics & Aromatics >C10-C44	<10000 µg/kg	TM414		123000	83300	231000	128000	226000	144000
Aromatics >EC5-EC7	<10 µg/kg	TM089		<10 4	<10 4	<10	<10 4	<10 4	<10
Aromatics >EC7-EC8	<10 µg/kg	TM089		<10 4	<10 4	<10	<10 4	<10 4	<10
Aromatics >EC8-EC10	<10 µg/kg	TM089		<10 4	<10 4	<10	<10 4	<10 4	28.8
Aromatics > EC10-EC12	<1000 µg/kg	TM414		<1000	<1000	<1000	<1000	1100	11900
Aromatics > EC12-EC16	<1000 µg/kg	TM414		1640	1730	<1000	4150	3810	13800
Aromatics > EC16-EC21	<1000 µg/kg	TM414		19300	12700	17800	20900	35900	34200
Aromatics > EC21-EC35	<1000 µg/kg	TM414		85300	54200	79700	71300	147000	39400
Aromatics >EC35-EC44	<1000 µg/kg	TM414		9600	9330	12400	8770	19800	4530
Aromatics > EC40-EC44	<1000 µg/kg	TM414		1180	1370	1880	1040	2010	<1000
Total Aromatics > EC10-EC44	<5000 µg/kg	TM414		116000	78400	111000	106000	208000	104000
Total Aliphatics & Aromatics >C5-C44	<10000 µg/kg	TM414		123000	78400	231000	128000	226000	144000
Total Aliphatics >C5-C10	<50 µg/kg	TM089		<50 4	<50 4	<50	<50 4	<50 4	62.4
Total Aromatics >EC5-EC10	<50 µg/kg	TM089		<50 4	<50 4	<50	<50 4	<50 4	<50
GRO >C5-C10	<20 µg/kg	TM089		<20 4	<20 4	<20	<20 4	<20 4	62.4

Validated

CERTIFICATE OF ANALYSIS

SDG:	210217-69	**Client Reference:**	P18-669	**Report Number:**	588256
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	

TPH CWG (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	W177-1	W177-2	W191-1	W192-1	W192-2	W204-19
			Depth (m)	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	15/02/2021	15/02/2021	15/02/2021	15/02/2021	15/02/2021	15/02/2021
			Sample Time	.	.	.	.	.	.
			Date Received	17/02/2021	17/02/2021	17/02/2021	17/02/2021	17/02/2021	17/02/2021
			SDG Ref	210217-69	210217-69	210217-69	210217-69	210217-69	210217-69
			Lab Sample No.(s)	23740671	23740678	23740700	23740611	23740619	23740629
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		52.7 4	45.6 4	39.4 4	54.7 4	44.6 4	52.3 4
Aliphatics >C5-C6	<10 µg/kg	TM089		<10 4	<10 4	<10 4	<10 4	<10 4	<10 4
Aliphatics >C6-C8	<10 µg/kg	TM089		<10 4	<10 4	<10 4	<10 4	<10 4	<10 4
Aliphatics >C8-C10	<10 µg/kg	TM089		<10 4	<10 4	<10 4	<10 4	<10 4	<10 4
Aliphatics >C10-C12	<1000 µg/kg	TM414		<1000	<1000	<1000	<1000	<1000	<1000
Aliphatics >C12-C16	<1000 µg/kg	TM414		1020	1050	1530	<1000	<1000	1190
Aliphatics >C16-C21	<1000 µg/kg	TM414		5140	4780	4410	1380	<1000	3780
Aliphatics >C21-C35	<1000 µg/kg	TM414		13300	12200	20700	9240	7380	16200
Aliphatics >C35-C44	<1000 µg/kg	TM414		<1000	<1000	4560	2410	1160	3590
Total Aliphatics >C10-C44	<5000 µg/kg	TM414		20000	18500	31500	13400	9020	25100
Total Aliphatics & Aromatics >C10-C44	<10000 µg/kg	TM414		505000	289000	101000	64200	35200	49100
Aromatics >EC5-EC7	<10 µg/kg	TM089		<10 4	<10 4	<10 4	<10 4	<10 4	<10 4
Aromatics >EC7-EC8	<10 µg/kg	TM089		<10 4	<10 4	<10 4	<10 4	<10 4	<10 4
Aromatics >EC8-EC10	<10 µg/kg	TM089		<10 4	<10 4	<10 4	<10 4	<10 4	<10 4
Aromatics > EC10-EC12	<1000 µg/kg	TM414		1330	1160	<1000	<1000	<1000	<1000
Aromatics > EC12-EC16	<1000 µg/kg	TM414		9610	4820	2530	1510	<1000	1510
Aromatics > EC16-EC21	<1000 µg/kg	TM414		121000	54000	11500	12000	5930	4730
Aromatics > EC21-EC35	<1000 µg/kg	TM414		295000	175000	46100	33200	18500	16400
Aromatics >EC35-EC44	<1000 µg/kg	TM414		58400	36200	8590	3540	1330	<1000
Aromatics > EC40-EC44	<1000 µg/kg	TM414		11000	6060	1680	<1000	<1000	<1000
Total Aromatics > EC10-EC44	<5000 µg/kg	TM414		485000	271000	69300	50800	26200	24100
Total Aliphatics & Aromatics >C5-C44	<10000 µg/kg	TM414		505000	289000	101000	64200	35200	49100
Total Aliphatics >C5-C10	<50 µg/kg	TM089		<50 4	<50 4	<50 4	<50 4	<50 4	<50 4
Total Aromatics >EC5-EC10	<50 µg/kg	TM089		<50 4	<50 4	<50 4	<50 4	<50 4	<50 4
GRO >C5-C10	<20 µg/kg	TM089		<20 4	<20 4	<20 4	<20 4	<20 4	<20 4

Validated

CERTIFICATE OF ANALYSIS

SDG:	210217-69	**Client Reference:**	P18-669	**Report Number:**	588256
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	

TPH CWG (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Customer Sample Ref.	W204-20
Depth (m)	0.20 - 0.20
Sample Type	Soil/Solid (S)
Date Sampled	15/02/2021
Sample Time	.
Date Received	17/02/2021
SDG Ref	210217-69
Lab Sample No.(s)	23740639
AGS Reference	

Component	LOD/Units	Method	
GRO Surrogate % recovery**	%	TM089	6.4 4
Aliphatics >C5-C6	<10 µg/kg	TM089	<10 4
Aliphatics >C6-C8	<10 µg/kg	TM089	<10 4
Aliphatics >C8-C10	<10 µg/kg	TM089	<10 4
Aliphatics >C10-C12	<1000 µg/kg	TM414	<1000
Aliphatics >C12-C16	<1000 µg/kg	TM414	<1000
Aliphatics >C16-C21	<1000 µg/kg	TM414	4860
Aliphatics >C21-C35	<1000 µg/kg	TM414	33800
Aliphatics >C35-C44	<1000 µg/kg	TM414	8530
Total Aliphatics >C10-C44	<5000 µg/kg	TM414	48000
Total Aliphatics & Aromatics >C10-C44	<10000 µg/kg	TM414	141000
Aromatics >EC5-EC7	<10 µg/kg	TM089	<10 4
Aromatics >EC7-EC8	<10 µg/kg	TM089	<10 4
Aromatics >EC8-EC10	<10 µg/kg	TM089	<10 4
Aromatics > EC10-EC12	<1000 µg/kg	TM414	<1000
Aromatics > EC12-EC16	<1000 µg/kg	TM414	1940
Aromatics > EC16-EC21	<1000 µg/kg	TM414	14900
Aromatics > EC21-EC35	<1000 µg/kg	TM414	65300
Aromatics >EC35-EC44	<1000 µg/kg	TM414	10100
Aromatics > EC40-EC44	<1000 µg/kg	TM414	1500
Total Aromatics > EC10-EC44	<5000 µg/kg	TM414	93100
Total Aliphatics & Aromatics >C5-C44	<10000 µg/kg	TM414	141000
Total Aliphatics >C5-C10	<50 µg/kg	TM089	<50 4
Total Aromatics >EC5-EC10	<50 µg/kg	TM089	<50 4
GRO >C5-C10	<20 µg/kg	TM089	<20 4

Validated

CERTIFICATE OF ANALYSIS

SDG:	210217-69	**Client Reference:**	P18-669	**Report Number:**	588256
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	

VOC MS (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	SPDL-1	SPDL-2	SPJB-1	SPJB-2	SPJB-3	W106-1
			Depth (m)	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	15/02/2021	15/02/2021	15/02/2021	15/02/2021	15/02/2021	15/02/2021
			Sample Time	.	.	.	.	.	.
			Date Received	17/02/2021	17/02/2021	17/02/2021	17/02/2021	17/02/2021	17/02/2021
			SDG Ref	210217-69	210217-69	210217-69	210217-69	210217-69	210217-69
			Lab Sample No.(s)	23740650	23740666	23740683	23740687	23740693	23740604
			AGS Reference						
Dibromofluoromethane**	%	TM116		102	102	103	103	101	106
Toluene-d8**	%	TM116		94	98.7	98.5	94.3	86.3	99.3
4-Bromofluorobenzene**	%	TM116		81	88.4	94.7	78.4	82	96.1
Methyl Tertiary Butyl Ether	<10 µg/kg	TM116		<200 M	<200 M	<200 M	<200 M	<200 M	<200 M
Benzene	<9 µg/kg	TM116		<180 M	<180 M	<180 M	<180 M	<180 M	<180 M
Toluene	<7 µg/kg	TM116		<140 M	<140 M	<140 M	<140 M	<140 M	<140 M
Ethylbenzene	<4 µg/kg	TM116		<80 M	<80 M	<80 M	<80 M	<80 M	<80 M
p/m-Xylene	<10 µg/kg	TM116		<200 #	<200 #	<200 #	<200 #	<200 #	<200 #
o-Xylene	<10 µg/kg	TM116		<200 M	<200 M	<200 M	<200 M	<200 M	<200 M
Naphthalene	<13 µg/kg	TM116		<260 M	<260 M	<260 M	<260 M	<260 M	<260 M
Sum of Detected Xylenes	<0.02 mg/kg	TM116		<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Sum of BTEX	<40 µg/kg	TM116		<800	<800	<800	<800	<800	<800

Validated

CERTIFICATE OF ANALYSIS

SDG:	210217-69	**Client Reference:**	P18-669	**Report Number:**	588256
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	

VOC MS (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	W177-1	W177-2	W191-1	W192-1	W192-2	W204-19
			Depth (m)	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	15/02/2021	15/02/2021	15/02/2021	15/02/2021	15/02/2021	15/02/2021
			Sample Time	.	.	.	.	.	.
			Date Received	17/02/2021	17/02/2021	17/02/2021	17/02/2021	17/02/2021	17/02/2021
			SDG Ref	210217-69	210217-69	210217-69	210217-69	210217-69	210217-69
			Lab Sample No.(s)	23740671	23740678	23740700	23740611	23740619	23740629
			AGS Reference						
Dibromofluoromethane**	%	TM116		109	96	99.1	109	109	106
Toluene-d8**	%	TM116		99.2	95.4	80.1	98.3	96.6	92.4
4-Bromofluorobenzene**	%	TM116		87.2	81	79.4	87.6	85.6	92
Methyl Tertiary Butyl Ether	<10 µg/kg	TM116		<200 M	<200 M	<200 M	<200 M	<200 M	<200 M
Benzene	<9 µg/kg	TM116		<180 M	<180 M	<180 M	<180 M	<180 M	<180 M
Toluene	<7 µg/kg	TM116		<140 M	<140 M	<140 M	<140 M	<140 M	<140 M
Ethylbenzene	<4 µg/kg	TM116		<80 M	<80 M	<80 M	<80 M	<80 M	<80 M
p/m-Xylene	<10 µg/kg	TM116		<200 #	<200 #	<200 #	<200 #	<200 #	<200 #
o-Xylene	<10 µg/kg	TM116		<200 M	<200 M	<200 M	<200 M	<200 M	<200 M
Naphthalene	<13 µg/kg	TM116		<260 M	<260 M	<260 M	<260 M	<260 M	<260 M
Sum of Detected Xylenes	<0.02 mg/kg	TM116		<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Sum of BTEX	<40 µg/kg	TM116		<800	<800	<800	<800	<800	<800

CERTIFICATE OF ANALYSIS

SDG:	210217-69	**Client Reference:**	P18-669	**Report Number:**	588256
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	

VOC MS (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Customer Sample Ref.	W204-20
Depth (m)	0.20 - 0.20
Sample Type	Soil/Solid (S)
Date Sampled	15/02/2021
Sample Time	.
Date Received	17/02/2021
SDG Ref	210217-69
Lab Sample No.(s)	23740639
AGS Reference	

Component	LOD/Units	Method	
Dibromofluoromethane**	%	TM116	97.6
Toluene-d8**	%	TM116	85.4
4-Bromofluorobenzene**	%	TM116	74.5
Methyl Tertiary Butyl Ether	<10 µg/kg	TM116	<200 M
Benzene	<9 µg/kg	TM116	<180 M
Toluene	<7 µg/kg	TM116	<140 M
Ethylbenzene	<4 µg/kg	TM116	<80 M
p/m-Xylene	<10 µg/kg	TM116	<200 #
o-Xylene	<10 µg/kg	TM116	<200 M
Naphthalene	<13 µg/kg	TM116	<260 M
Sum of Detected Xylenes	<0.02 mg/kg	TM116	<0.4
Sum of BTEX	<40 µg/kg	TM116	<800

CERTIFICATE OF ANALYSIS

SDG:	210217-69	**Client Reference:**	P18-669	**Report Number:**	588256
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	

Asbestos Identification - Solid Samples

Results Legend

#	ISO17025 accredited.
M	*m*CERTS accredited.
*	Subcontracted test.
(F)	Trigger breach confirmed
1-5&+$@	Sample deviation (see appendix)

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthophyllite	Fibrous Tremolite	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	SPDL-2 0.20 - 0.20 SOLID 15/02/2021 00:00:00 17/02/2021 05:00:00 210217-69 23740666 TM048	24/02/2021	Barbara Urbanek-Walsh	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	SPJB-2 0.20 - 0.20 SOLID 15/02/2021 00:00:00 17/02/2021 05:00:00 210217-69 23740687 TM048	23/02/2021	Paul Poynton	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	W106-1 0.20 - 0.20 SOLID 15/02/2021 00:00:00 17/02/2021 05:00:00 210217-69 23740604 TM048	24/02/2021	Barbara Urbanek-Walsh	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	W177-2 0.20 - 0.20 SOLID 15/02/2021 00:00:00 17/02/2021 05:00:00 210217-69 23740678 TM048	23/02/2021	James Richards	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	W191-1 0.20 - 0.20 SOLID 15/02/2021 00:00:00 17/02/2021 05:00:00 210217-69 23740700 TM048	24/02/2021	Agnieszka Chelmowska	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	W192-2 0.20 - 0.20 SOLID 15/02/2021 00:00:00 17/02/2021 05:00:00 210217-69 23740619 TM048	23/02/2021	James Richards	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	W204-20 0.20 - 0.20 SOLID 15/02/2021 00:00:00 17/02/2021 05:00:00 210217-69 23740639 TM048	23/02/2021	Agnieszka Chelmowska	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected

CERTIFICATE OF ANALYSIS

SDG:	210217-69	**Client Reference:**	P18-669	**Report Number:**	588256
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	

Table of Results - Appendix

Method No	Reference	Description
PM024	Modified BS 1377	Soil preparation including homogenisation, moisture screens of soils for Asbestos Containing Material
TM024	Method 4500A & B, AWWA/APHA, 20th Ed., 1999	Determination of Exchangeable Ammonium and Ammoniacal Nitrogen as N by titration on solids
TM048	HSG 248, Asbestos: The analysts' guide for sampling, analysis and clearance procedures	Identification of Asbestos in Bulk Material
TM062 (S)	National Grid Property Holdings Methods for the Collection & Analysis of Samples from National Grid Sites version 1 Sec 3.9	Determination of Phenols in Soils by HPLC
TM089	Modified: US EPA Methods 8020 & 602	Determination of Gasoline Range Hydrocarbons (GRO) by Headspace GC-FID (C4-C12)
TM116	Modified: US EPA Method 8260, 8120, 8020, 624, 610 & 602	Determination of Volatile Organic Compounds by Headspace / GC-MS
TM132	In - house Method	ELTRA CS800 Operators Guide
TM133	BS 1377: Part 3 1990;BS 6068-2.5	Determination of pH in Soil and Water using the GLpH pH Meter
TM153	Method 4500A,B,C, I, M AWWA/APHA, 20th Ed., 1999	Determination of Total Cyanide, Free (Easily Liberatable) Cyanide and Thiocyanate using the Skalar SANS+ System Segmented Flow Analyser
TM181	US EPA Method 6010B	Determination of Routine Metals in Soil by iCap 6500 Duo ICP-OES
TM218	Shaker extraction - EPA method 3546.	The determination of PAH in soil samples by GC-MS
TM414	Analysis of Petroleum Hydrocarbons in Environmental Media – Total Petroleum Hydrocarbon Criteria	Determination of Speciated Extractable Petroleum Hydrocarbons in Soils by GCxGC-FID

NA = not applicable.

Chemical testing (unless subcontracted) performed at ALS Life Sciences Ltd Hawarden (Method codes TM) or ALS Life Sciences Ltd Aberdeen (Method codes S).

CERTIFICATE OF ANALYSIS

SDG:	210217-69	**Client Reference:**	P18-669	**Report Number:**	588256
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	

Test Completion Dates

Lab Sample No(s)	23740650	23740666	23740683	23740687	23740693	23740604	23740671	23740678	23740700	23740611
Customer Sample Ref.	SPDL-1	SPDL-2	SPJB-1	SPJB-2	SPJB-3	W106-1	W177-1	W177-2	W191-1	W192-1
AGS Ref.										
Depth	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
Ammonium Soil by Titration	23-Feb-2021	23-Feb-2021	23-Feb-2021	23-Feb-2021	23-Feb-2021	23-Feb-2021	23-Feb-2021	23-Feb-2021	23-Feb-2021	23-Feb-2021
Asbestos ID in Solid Samples		24-Feb-2021		23-Feb-2021		24-Feb-2021		23-Feb-2021	24-Feb-2021	
Cyanide Comp/Free/Total/Thiocyanate	23-Feb-2021	23-Feb-2021	23-Feb-2021	23-Feb-2021	23-Feb-2021	23-Feb-2021	23-Feb-2021	23-Feb-2021	23-Feb-2021	23-Feb-2021
EPH CWG GC (S)	19-Feb-2021	19-Feb-2021	19-Feb-2021	19-Feb-2021	22-Feb-2021	19-Feb-2021	19-Feb-2021	19-Feb-2021	19-Feb-2021	19-Feb-2021
GRO by GC-FID (S)	24-Feb-2021	24-Feb-2021	23-Feb-2021	24-Feb-2021	24-Feb-2021	23-Feb-2021	24-Feb-2021	24-Feb-2021	24-Feb-2021	24-Feb-2021
Metals in solid samples by OES	25-Feb-2021	23-Feb-2021	25-Feb-2021	25-Feb-2021	25-Feb-2021	25-Feb-2021	23-Feb-2021	24-Feb-2021	25-Feb-2021	25-Feb-2021
PAH by GCMS	23-Feb-2021	23-Feb-2021	23-Feb-2021	23-Feb-2021	24-Feb-2021	23-Feb-2021	23-Feb-2021	23-Feb-2021	23-Feb-2021	23-Feb-2021
pH	18-Feb-2021	18-Feb-2021	18-Feb-2021	18-Feb-2021	18-Feb-2021	18-Feb-2021	18-Feb-2021	18-Feb-2021	18-Feb-2021	18-Feb-2021
Phenols by HPLC (S)	22-Feb-2021	22-Feb-2021	22-Feb-2021	22-Feb-2021	22-Feb-2021	22-Feb-2021	22-Feb-2021	22-Feb-2021	22-Feb-2021	22-Feb-2021
Sample description	17-Feb-2021	17-Feb-2021	17-Feb-2021	17-Feb-2021	17-Feb-2021	17-Feb-2021	17-Feb-2021	17-Feb-2021	17-Feb-2021	17-Feb-2021
Total Organic Carbon	23-Feb-2021	23-Feb-2021	23-Feb-2021	23-Feb-2021	23-Feb-2021	23-Feb-2021	23-Feb-2021	23-Feb-2021	23-Feb-2021	23-Feb-2021
TPH CWG GC (S)	24-Feb-2021	24-Feb-2021	23-Feb-2021	24-Feb-2021	24-Feb-2021	23-Feb-2021	24-Feb-2021	24-Feb-2021	24-Feb-2021	24-Feb-2021
VOC MS (S)	23-Feb-2021	23-Feb-2021	23-Feb-2021	23-Feb-2021	23-Feb-2021	23-Feb-2021	23-Feb-2021	23-Feb-2021	23-Feb-2021	23-Feb-2021

Lab Sample No(s)	23740619	23740629	23740639
Customer Sample Ref.	W192-2	W204-19	W204-20
AGS Ref.			
Depth	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
Ammonium Soil by Titration	23-Feb-2021	23-Feb-2021	23-Feb-2021
Asbestos ID in Solid Samples	23-Feb-2021		23-Feb-2021
Cyanide Comp/Free/Total/Thiocyanate	23-Feb-2021	23-Feb-2021	23-Feb-2021
EPH CWG GC (S)	19-Feb-2021	19-Feb-2021	19-Feb-2021
GRO by GC-FID (S)	24-Feb-2021	24-Feb-2021	24-Feb-2021
Metals in solid samples by OES	24-Feb-2021	25-Feb-2021	25-Feb-2021
PAH by GCMS	24-Feb-2021	24-Feb-2021	23-Feb-2021
pH	18-Feb-2021	18-Feb-2021	18-Feb-2021
Phenols by HPLC (S)	22-Feb-2021	22-Feb-2021	22-Feb-2021
Sample description	17-Feb-2021	17-Feb-2021	17-Feb-2021
Total Organic Carbon	23-Feb-2021	23-Feb-2021	23-Feb-2021
TPH CWG GC (S)	24-Feb-2021	24-Feb-2021	24-Feb-2021
VOC MS (S)	23-Feb-2021	23-Feb-2021	23-Feb-2021

Appendix General

1. Results are expressed on a dry weight basis (dried at 35ºC) for all soil analyses except for the following: NRA and CEN Leach tests, flash point LOI, pH, ammonium as NH4 by the BRE method, VOC TICs and SVOC TICs.

2. If sufficient sample is received a sub sample will be retained free of charge for 30 days after analysis is completed (e-mailed) for all sample types unless the sample is destroyed on testing. The prepared soil sub sample that is analysed for asbestos will be retained for a period of 6 months after the analysis date. All bulk samples will be retained for a period of 6 months after the analysis date. All samples received and not scheduled will be disposed of one month after the date of receipt unless we are instructed to the contrary. Once the initial period has expired, a storage charge will be applied for each month or part thereof until the client cancels the request for sample storage. ALS reserve the right to charge for samples received and stored but not analysed.

3. With respect to turnaround, we will always endeavour to meet client requirements wherever possible, but turnaround times cannot be absolutely guaranteed due to so many variables beyond our control.

4. We take responsibility for any test performed by sub-contractors (marked with an asterisk). We endeavour to use UKAS/MCERTS Accredited Laboratories, who either complete a quality questionnaire or are audited by ourselves. For some determinands there are no UKAS/MCERTS Accredited Laboratories, in this instance a laboratory with a known track record will be utilised.

5. If no separate volatile sample is supplied by the client, or if a headspace or sediment is present in the volatile sample, the integrity of the data may be compromised. This will be flagged up as an invalid VOC on the test schedule and the result marked as deviating on the test certificate.

6. NDP - No determination possible due to insufficient/unsuitable sample.

7. Results relate only to the items tested.

8. LoDs (Limit of Detection) for wet tests reported on a dry weight basis are not corrected for moisture content.

9. **Surrogate recoveries** - Surrogates are added to your sample to monitor recovery of the test requested. A % recovery is reported, results are not corrected for the recovery measured. Typical recoveries for organics tests are 70-130%. Recoveries in soils are affected by organic rich or clay rich matrices. Waters can be affected by remediation fluids or high amounts of sediment. Test results are only ever reported if all of the associated quality checks pass; it is assumed that all recoveries outside of the values above are due to matrix affect.

10. Stones/debris are not routinely removed. We always endeavour to take a representative sub sample from the received sample.

11. In certain circumstances the method detection limit may be elevated due to the sample being outside the calibration range. Other factors that may contribute to this include possible interferences. In both cases the sample would be diluted which would cause the method detection limit to be raised.

12. Mercury results quoted on soils will not include volatile mercury as the analysis is performed on a dried and crushed sample.

13. For leachate preparations other than Zero Headspace Extraction (ZHE) volatile loss may occur.

14. For the BSEN 12457-3 two batch process to allow the cumulative release to be calculated, the volume of the leachate produced is measured and filtered for all tests. We therefore cannot carry out any unfiltered analysis. The tests affected include volatiles GCFID/GCMS and all subcontracted analysis.

15. Analysis and identification of specific compounds using GCFID is by retention time only, and we routinely calibrate and quantify for benzene, toluene, ethylbenzenes and xylenes (BTEX). For total volatiles in the C5-C12 range, the total area of the chromatogram is integrated and expressed as ug/kg or ug/l. Although this analysis is commonly used for the quantification of gasoline range organics (GRO), the system will also detect other compounds such as chlorinated solvents, and this may lead to a falsely high result with respect to hydrocarbons only. It is not possible to specifically identify these non-hydrocarbons, as standards are not routinely run for any other compounds, and for more definitive identification, volatiles by GCMS should be utilised.

16. We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample. Other coarse granular material such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

17. **Tentatively Identified Compounds (TICs)** are non-target peaks in VOC and SVOC analysis. All non-target peaks detected with a concentration above the LoD are subjected to a mass spectral library search. Non-target peaks with a library search confidence of >75% are reported based on the best mass spectral library match. When a non-target peak with a library search confidence of <75% is detected it is reported as "mixed hydrocarbons". Non-target compounds identified from the scan data are semi-quantified relative to one of the deuterated internal standards, under the same chromatographic conditions as the target compounds. This result is reported as a semi-quantitative value and reported as Tentatively Identified Compounds (TICs). TICs are outside the scope of UKAS accreditation and are not moisture corrected.

18. **Sample Deviations**

If a sample is classed as deviated then the associated results may be compromised.

1	**Container with Headspace provided for volatiles analysis**
2	**Incorrect container received**
3	**Deviation from method**
4	**Matrix interference**
♦	**Sample holding time exceeded in laboratory**
@	**Sample holding time exceeded due to late arrival of instructions or samples**
§	**Sampled on date not provided**

19. **Asbestos**

When requested, the individual sub sample scheduled will be analysed in house for the presence of asbestos fibres and asbestos containing material by our documented in house method TM048 based on HSG 248 (2005), which is accredited to ISO17025. If a specific asbestos fibre type is not found this will be reported as "Not detected". If no asbestos fibre types are found all will be reported as "Not detected" and the sub sample analysed deemed to be clear of asbestos. If an asbestos fibre type is found it will be reported as detected (for each fibre type found). Testing can be carried out on asbestos positive samples, but, due to Health and Safety considerations, may be replaced by alternative tests or reported as No Determination Possible (NDP). The quantity of asbestos present is not determined unless specifically requested.

Identification of Asbestos in Bulk Materials & Soils

The results for identification of asbestos in bulk materials are obtained from supplied bulk materials which have been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

The results for identification of asbestos in soils are obtained from a homogenised sub sample which has been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

Asbestos Type	Common Name
Chrysotile	White Asbestos
Amosite	Brown Asbestos
Crocidolite	Blue Asbestos
Fibrous Actinolite	-
Fibrous Anthophyllite	-
Fibrous Tremolite	-

Visual Estimation Of Fibre Content

Estimation of fibre content is not permitted as part of our UKAS accredited test other than: - Trace - Where only one or two asbestos fibres were identified.

Respirable Fibres

Respirable fibres are defined as fibres of <3 µm diameter, longer than 5 µm and with aspect ratios of at least 3:1 that can be inhaled into the lower regions of the lung and are generally acknowledged to be most important predictor of hazard and risk for cancers of the lung.
Standing Committee of Analysts, *The Quantification of Asbestos in Soil (2017).*

Further guidance on typical asbestos fibre content of manufactured products can be found in HSG 264.

The identification of asbestos containing materials and soils falls within our schedule of tests for which we hold UKAS accreditation, however opinions, interpretations and all other information contained in the report are outside the scope of UKAS accreditation.

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Rodgers Leask
Office 225
2430/2440
Aztec West
Almondsbury
Bristol
BS32 4QA

Attention: Elliot Thomas

CERTIFICATE OF ANALYSIS

Date of report Generation:	09 March 2021
Customer:	Rodgers Leask
Sample Delivery Group (SDG):	210218-32
Your Reference:	P18-669
Location:	Llanwern
Report No:	589805

This report has been revised and directly supersedes 589801 in its entirety.

We received 54 samples on Thursday February 18, 2021 and 54 of these samples were scheduled for analysis which was completed on Tuesday March 09, 2021. Accredited laboratory tests are defined within the report, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation.

Should this report require incorporation into client reports, it must be used in its entirety and not simply with the data sections alone.

Chemical testing (unless subcontracted) performed at ALS Life Sciences Ltd Hawarden (Method codes TM) or ALS Life Sciences Ltd Aberdeen (Method codes S).

All sample data is provided by the customer. The reported results relate to the sample supplied, and on the basis that this data is correct.
Incorrect sampling dates and/or sample information will affect the validity of results.
The customer is not permitted to reproduce this report except in full without the approval of the laboratory.

Approved By:

Sonia McWhan

Operations Manager

CERTIFICATE OF ANALYSIS

SDG:	210218-32	**Client Reference:**	P18-669	**Report Number:**	589805
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	589801

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
23748251	SPDL-1		0.20 - 0.20	16/02/2021
23747881	SPDL-2		0.20 - 0.20	16/02/2021
23747887	SPDL-3		0.20 - 0.20	16/02/2021
23747896	SPDL-4		0.20 - 0.20	16/02/2021
23748172	SPJJ-1		0.20 - 0.20	16/02/2021
23748234	SPJJ-2		0.20 - 0.20	16/02/2021
23748241	SPJJ-3		0.20 - 0.20	16/02/2021
23748245	SPJJ-4		0.20 - 0.20	16/02/2021
23747877	SPLB-1		0.20 - 0.20	16/02/2021
23747944	SPLB-2		0.20 - 0.20	16/02/2021
23748025	SPLB-3		0.20 - 0.20	16/02/2021
23748100	SPLB-4		0.20 - 0.20	16/02/2021
23747902	W35-1		0.20 - 0.20	16/02/2021
23747909	W35-2		0.20 - 0.20	16/02/2021
23747914	W35-3		0.20 - 0.20	16/02/2021
23747921	W35-4		0.20 - 0.20	16/02/2021
23747924	W35-5		0.20 - 0.20	16/02/2021
23747930	W35-6		0.20 - 0.20	16/02/2021
23748130	W129-1		0.20 - 0.20	17/02/2021
23748135	W129-2		0.20 - 0.20	17/02/2021
23747982	W131-1		0.20 - 0.20	17/02/2021
23747988	W131-2		0.20 - 0.20	17/02/2021
23748000	W131-3		0.20 - 0.20	17/02/2021
23748009	W131-4		0.20 - 0.20	17/02/2021
23748017	W156-1		0.20 - 0.20	17/02/2021
23748032	W156-2		0.20 - 0.20	17/02/2021
23748046	W156-3		0.20 - 0.20	17/02/2021
23748052	W156-4		0.20 - 0.20	17/02/2021
23748060	W156-5		0.20 - 0.20	17/02/2021
23748067	W156-6		0.20 - 0.20	17/02/2021
23748072	W156-7		0.20 - 0.20	17/02/2021
23748077	W156-8		0.20 - 0.20	17/02/2021
23748084	W156-9		0.20 - 0.20	17/02/2021
23748094	W206-1		0.20 - 0.20	17/02/2021
23748105	W206-2		0.20 - 0.20	17/02/2021
23748115	W206-3		0.20 - 0.20	17/02/2021
23748120	W206-4		0.20 - 0.20	17/02/2021
23748200	W208-1		0.20 - 0.20	17/02/2021
23748230	W208-2		0.20 - 0.20	17/02/2021
23747937	W209-1		0.20 - 0.20	17/02/2021
23747950	W209-2		0.20 - 0.20	17/02/2021
23747954	W209-3		0.20 - 0.20	17/02/2021
23747961	W209-4		0.20 - 0.20	17/02/2021
23747966	W209-5		0.20 - 0.20	17/02/2021
23747973	W209-6		0.20 - 0.20	17/02/2021
23748089	W156-10		0.20 - 0.20	17/02/2021
23748142	W209B-1		0.20 - 0.20	17/02/2021
23748146	W209B-2		0.20 - 0.20	17/02/2021
23748156	W209B-3		0.20 - 0.20	17/02/2021
23748161	W209B-4		0.20 - 0.20	17/02/2021
23748167	W209C-1		0.20 - 0.20	17/02/2021
23748178	W209C-2		0.20 - 0.20	17/02/2021
23748183	W209C-3		0.20 - 0.20	17/02/2021
23748191	W209C-4		0.20 - 0.20	17/02/2021

Only received samples which have had analysis scheduled will be shown on the following pages.

Validated

CERTIFICATE OF ANALYSIS

SDG:	210218-32	**Client Reference:**	P18-669	**Report Number:**	589805
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	589801

Results Legend

X Test

N No Determination Possible

Sample Types -

S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

Lab Sample No(s)			23748251		23747881		23747887		23747896		23748172		23748234		23748241		23748245				
Customer Sample Reference			SPDL-1		SPDL-2		SPDL-3		SPDL-4		SPJJ-1		SPJJ-2		SPJJ-3		SPJJ-4				
AGS Reference																					
Depth (m)			0.20 - 0.20		0.20 - 0.20		0.20 - 0.20		0.20 - 0.20		0.20 - 0.20		0.20 - 0.20		0.20 - 0.20		0.20 - 0.20				
Container			1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)
Sample Type			S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
Ammonium Soil by Titration	All	NDPs: 0 Tests: 54		X		X			X		X			X		X			X		X
Asbestos ID in Solid Samples	All	NDPs: 0 Tests: 27	X					X					X					X			
Asbestos Quantification - Full	All	NDPs: 0 Tests: 8											X								
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 54		X		X			X		X			X		X			X		X
EPH CWG GC (S)	All	NDPs: 0 Tests: 54		X		X			X		X			X		X			X		X
GRO by GC-FID (S)	All	NDPs: 0 Tests: 54			X		X			X		X			X		X			X	
Metals in solid samples by OES	All	NDPs: 0 Tests: 54		X		X			X		X			X		X			X		X
PAH by GCMS	All	NDPs: 0 Tests: 54		X		X			X		X			X		X			X		X
pH	All	NDPs: 0 Tests: 54		X		X			X		X			X		X			X		X
Phenols by HPLC (S)	All	NDPs: 0 Tests: 54		X		X			X		X			X		X			X		X
Sample description	All	NDPs: 0 Tests: 54		X		X			X		X			X		X			X		X
Total Organic Carbon	All	NDPs: 0 Tests: 54		X		X			X		X			X		X			X		X
TPH CWG GC (S)	All	NDPs: 0 Tests: 54		X		X			X		X			X		X			X		X
VOC MS (S)	All	NDPs: 0 Tests: 54			X		X			X		X			X		X			X	

23747921	W35-4		0.20 - 0.20	60g VOC (ALE215)	S						X								X
				250g Amber Jar (ALE210)	S	X			X	X		X	X	X	X	X	X	X	
23747914	W35-3		0.20 - 0.20	60g VOC (ALE215)	S						X								X
				250g Amber Jar (ALE210)	S	X			X	X		X	X	X	X	X	X	X	
				1kg TUB with Handle (ALE260)	S		X												
23747909	W35-2		0.20 - 0.20	60g VOC (ALE215)	S						X								X
				250g Amber Jar (ALE210)	S	X			X	X		X	X	X	X	X	X	X	
23747902	W35-1		0.20 - 0.20	60g VOC (ALE215)	S						X								X
				250g Amber Jar (ALE210)	S	X			X	X		X	X	X	X	X	X	X	
				1kg TUB with Handle (ALE260)	S		X	X											
23748100	SPLB-4		0.20 - 0.20	60g VOC (ALE215)	S						X								X
				250g Amber Jar (ALE210)	S	X			X	X		X	X	X	X	X	X	X	
23748025	SPLB-3		0.20 - 0.20	60g VOC (ALE215)	S						X								X
				250g Amber Jar (ALE210)	S	X			X	X		X	X	X	X	X	X	X	
				1kg TUB with Handle (ALE260)	S		X												
23747944	SPLB-2		0.20 - 0.20	60g VOC (ALE215)	S						X								X
				250g Amber Jar (ALE210)	S	X			X	X		X	X	X	X	X	X	X	
23747877	SPLB-1		0.20 - 0.20	60g VOC (ALE215)	S						X								X
				250g Amber Jar (ALE210)	S	X			X	X		X	X	X	X	X	X	X	
				1kg TUB with Handle (ALE260)	S		X												
23748245	SPJJ-4		0.20 - 0.20	60g VOC (ALE215)	S						X								X

Validated

CERTIFICATE OF ANALYSIS

SDG:	210218-32	**Client Reference:**	P18-669	**Report Number:**	589805
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	589801

Results Legend

X Test

N No Determination Possible

Sample Types -

S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
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PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

Lab Sample No(s)			23747924		23747930		23748130		23748135		23747982		23747988		23748000		23748009				
Customer Sample Reference			W35-5		W35-6		W129-1		W129-2		W131-1		W131-2		W131-3		W131-4				
AGS Reference																					
Depth (m)			0.20 - 0.20		0.20 - 0.20		0.20 - 0.20		0.20 - 0.20		0.20 - 0.20		0.20 - 0.20		0.20 - 0.20		0.20 - 0.20				
Container			1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)
Sample Type			S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
Ammonium Soil by Titration	All	NDPs: 0 Tests: 54		X		X			X		X			X		X			X		X
Asbestos ID in Solid Samples	All	NDPs: 0 Tests: 27	X					X					X					X			
Asbestos Quantification - Full	All	NDPs: 0 Tests: 8	X					X													
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 54		X		X			X		X			X		X			X		X
EPH CWG GC (S)	All	NDPs: 0 Tests: 54		X		X			X		X			X		X			X		X
GRO by GC-FID (S)	All	NDPs: 0 Tests: 54			X		X			X		X			X		X			X	
Metals in solid samples by OES	All	NDPs: 0 Tests: 54		X		X			X		X			X		X			X		X
PAH by GCMS	All	NDPs: 0 Tests: 54		X		X			X		X			X		X			X		X
pH	All	NDPs: 0 Tests: 54		X		X			X		X			X		X			X		X
Phenols by HPLC (S)	All	NDPs: 0 Tests: 54		X		X			X		X			X		X			X		X
Sample description	All	NDPs: 0 Tests: 54		X		X			X		X			X		X			X		X
Total Organic Carbon	All	NDPs: 0 Tests: 54		X		X			X		X			X		X			X		X
TPH CWG GC (S)	All	NDPs: 0 Tests: 54		X		X			X		X			X		X			X		X
VOC MS (S)	All	NDPs: 0 Tests: 54			X		X			X		X			X		X			X	

23748077	W156-8		0.20 - 0.20	60g VOC (ALE215)	S								x										x
				250g Amber Jar (ALE210)	S	x				x	x		x	x	x	x	x	x	x				
23748072	W156-7		0.20 - 0.20	60g VOC (ALE215)	S								x										x
				250g Amber Jar (ALE210)	S	x				x	x		x	x	x	x	x	x	x				
				1kg TUB with Handle (ALE260)	S		x																
23748067	W156-6		0.20 - 0.20	60g VOC (ALE215)	S								x										x
				250g Amber Jar (ALE210)	S	x				x	x		x	x	x	x	x	x	x				
23748060	W156-5		0.20 - 0.20	60g VOC (ALE215)	S								x										x
				250g Amber Jar (ALE210)	S	x				x	x		x	x	x	x	x	x	x				
				1kg TUB with Handle (ALE260)	S		x		x														
23748052	W156-4		0.20 - 0.20	60g VOC (ALE215)	S								x										x
				250g Amber Jar (ALE210)	S	x				x	x		x	x	x	x	x	x	x				
23748046	W156-3		0.20 - 0.20	60g VOC (ALE215)	S								x										x
				250g Amber Jar (ALE210)	S	x				x	x		x	x	x	x	x	x	x				
				1kg TUB with Handle (ALE260)	S		x																
23748032	W156-2		0.20 - 0.20	60g VOC (ALE215)	S								x										x
				250g Amber Jar (ALE210)	S	x				x	x		x	x	x	x	x	x	x				
23748017	W156-1		0.20 - 0.20	60g VOC (ALE215)	S								x										x
				250g Amber Jar (ALE210)	S	x				x	x		x	x	x	x	x	x	x				
				1kg TUB with Handle (ALE260)	S		x																
23748009	W131-4		0.20 - 0.20	60g VOC (ALE215)	S								x										x

Validated

CERTIFICATE OF ANALYSIS

SDG:	210218-32	**Client Reference:**	P18-669	**Report Number:**	589805
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	589801

Results Legend

X Test

N No Determination Possible

Sample Types -

S - Soil/Solid
UNS - Unspecified Solid
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PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

Lab Sample No(s)			23748084		23748094		23748105		23748115		23748120		23748200		23748230		23747937			
Customer Sample Reference			W156-9		W206-1		W206-2		W206-3		W206-4		W208-1		W208-2		W209-1			
AGS Reference																				
Depth (m)			0.20 - 0.20		0.20 - 0.20		0.20 - 0.20		0.20 - 0.20		0.20 - 0.20		0.20 - 0.20		0.20 - 0.20		0.20 - 0.20			
Container			1kg TUB with Handle (ALE260)	60g VOC (ALE215)	1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)
Sample Type			S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
Ammonium Soil by Titration	All	NDPs: 0 Tests: 54	X			X		X			X		X			X		X		X
Asbestos ID in Solid Samples	All	NDPs: 0 Tests: 27	X		X					X					X				X	
Asbestos Quantification - Full	All	NDPs: 0 Tests: 8			X															
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 54	X			X		X			X		X			X		X		X
EPH CWG GC (S)	All	NDPs: 0 Tests: 54	X			X		X			X		X			X		X		X
GRO by GC-FID (S)	All	NDPs: 0 Tests: 54		X			X		X			X		X			X		X	
Metals in solid samples by OES	All	NDPs: 0 Tests: 54	X			X		X			X		X			X		X		X
PAH by GCMS	All	NDPs: 0 Tests: 54	X			X		X			X		X			X		X		X
pH	All	NDPs: 0 Tests: 54	X			X		X			X		X			X		X		X
Phenols by HPLC (S)	All	NDPs: 0 Tests: 54	X			X		X			X		X			X		X		X
Sample description	All	NDPs: 0 Tests: 54	X			X		X			X		X			X		X		X
Total Organic Carbon	All	NDPs: 0 Tests: 54	X			X		X			X		X			X		X		X
TPH CWG GC (S)	All	NDPs: 0 Tests: 54	X			X		X			X		X			X		X		X
VOC MS (S)	All	NDPs: 0 Tests: 54		X			X		X			X		X			X		X	

23748156	W209B-3		0.20 - 0.20	1kg TUB with Handle (ALE260)	S			X													
23748146	W209B-2		0.20 - 0.20	60g VOC (ALE215)	S							X									X
				250g Amber Jar (ALE210)	S	X				X	X		X	X	X	X	X	X	X	X	
23748142	W209B-1		0.20 - 0.20	60g VOC (ALE215)	S							X									X
				250g Amber Jar (ALE210)	S	X				X	X		X	X	X	X	X	X	X	X	
				1kg TUB with Handle (ALE260)	S			X													
23748089	W156-10		0.20 - 0.20	60g VOC (ALE215)	S							X									X
				250g Amber Jar (ALE210)	S	X				X	X		X	X	X	X	X	X	X	X	
23747973	W209-6		0.20 - 0.20	60g VOC (ALE215)	S							X									X
				250g Amber Jar (ALE210)	S	X				X	X		X	X	X	X	X	X	X	X	
23747966	W209-5		0.20 - 0.20	60g VOC (ALE215)	S							X									X
				250g Amber Jar (ALE210)	S	X				X	X		X	X	X	X	X	X	X	X	
				1kg TUB with Handle (ALE260)	S			X	X												
23747961	W209-4		0.20 - 0.20	60g VOC (ALE215)	S							X									X
				250g Amber Jar (ALE210)	S	X				X	X		X	X	X	X	X	X	X	X	
23747954	W209-3		0.20 - 0.20	60g VOC (ALE215)	S							X									X
				250g Amber Jar (ALE210)	S	X				X	X		X	X	X	X	X	X	X	X	
				1kg TUB with Handle (ALE260)	S			X													
23747950	W209-2		0.20 - 0.20	60g VOC (ALE215)	S							X									X
				250g Amber Jar (ALE210)	S	X				X	X		X	X	X	X	X	X	X	X	
23747937	W209-1		0.20 - 0.20	60g VOC (ALE215)	S							X									X

CERTIFICATE OF ANALYSIS

SDG:	210218-32	**Client Reference:**	P18-669	**Report Number:**	589805
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	589801

Results Legend

X Test

N No Determination Possible

Sample Types -

S - Soil/Solid
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UNL - Unspecified Liquid
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OTH - Other

Lab Sample No(s)			23748156	23748161	23748167	23748178	23748183	23748191						
Customer Sample Reference			W209B-3	W209B-4	W209C-1	W209C-2	W209C-3	W209C-4						
AGS Reference														
Depth (m)			0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20						
Container			250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)
Sample Type			S	S	S	S	S	S	S	S	S	S	S	S	S	S
Ammonium Soil by Titration	All	NDPs: 0 Tests: 54	X		X			X		X			X		X	
Asbestos ID in Solid Samples	All	NDPs: 0 Tests: 27					X					X				
Asbestos Quantification - Full	All	NDPs: 0 Tests: 8										X				
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 54	X		X			X		X			X		X	
EPH CWG GC (S)	All	NDPs: 0 Tests: 54	X		X			X		X			X		X	
GRO by GC-FID (S)	All	NDPs: 0 Tests: 54		X		X			X		X			X		X
Metals in solid samples by OES	All	NDPs: 0 Tests: 54	X		X			X		X			X		X	
PAH by GCMS	All	NDPs: 0 Tests: 54	X		X			X		X			X		X	
pH	All	NDPs: 0 Tests: 54	X		X			X		X			X		X	
Phenols by HPLC (S)	All	NDPs: 0 Tests: 54	X		X			X		X			X		X	
Sample description	All	NDPs: 0 Tests: 54	X		X			X		X			X		X	
Total Organic Carbon	All	NDPs: 0 Tests: 54	X		X			X		X			X		X	
TPH CWG GC (S)	All	NDPs: 0 Tests: 54	X		X			X		X			X		X	
VOC MS (S)	All	NDPs: 0 Tests: 54		X		X			X		X			X		X

CERTIFICATE OF ANALYSIS

SDG:	210218-32	**Client Reference:**	P18-669	**Report Number:**	589805
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	589801

Sample Descriptions

Grain Sizes

very fine	<0.063mm	fine	0.063mm - 0.1mm	medium	0.1mm - 2mm	coarse	2mm - 10mm	very coarse	>10mm

Lab Sample No(s)	Customer Sample Ref.	Depth (m)	Colour	Description	Inclusions	Inclusions 2
23748251	SPDL-1	0.20 - 0.20	Black	Loamy Sand	Stones	None
23747881	SPDL-2	0.20 - 0.20	Dark Brown	Sandy Silt Loam	Vegetation	Stones
23747887	SPDL-3	0.20 - 0.20	Dark Brown	Loamy Sand	Stones	Vegetation
23747896	SPDL-4	0.20 - 0.20	Dark Brown	Sand	Vegetation	Stones
23748172	SPJJ-1	0.20 - 0.20	Dark Brown	Sandy Clay Loam	Stones	None
23748234	SPJJ-2	0.20 - 0.20	Dark Brown	Sandy Silt Loam	Stones	Brick
23748241	SPJJ-3	0.20 - 0.20	Dark Brown	Sandy Silt Loam	Stones	Brick
23748245	SPJJ-4	0.20 - 0.20	Light Brown	Sandy Clay Loam	Stones	Vegetation
23747877	SPLB-1	0.20 - 0.20	Dark Brown	Sandy Clay Loam	Stones	Brick
23747944	SPLB-2	0.20 - 0.20	Dark Brown	Clay	Stones	Vegetation
23748025	SPLB-3	0.20 - 0.20	Dark Brown	Loamy Sand	Stones	Brick
23748100	SPLB-4	0.20 - 0.20	Dark Brown	Loamy Sand	Stones	Vegetation
23747902	W35-1	0.20 - 0.20	Black	Sandy Silt Loam	Stones	None
23747909	W35-2	0.20 - 0.20	Dark Brown	Loamy Sand	Stones	Vegetation
23747914	W35-3	0.20 - 0.20	Dark Brown	Loamy Sand	Stones	Vegetation
23747921	W35-4	0.20 - 0.20	Black	Loamy Sand	Stones	Vegetation
23747924	W35-5	0.20 - 0.20	Dark Brown	Sand	None	Stones
23747930	W35-6	0.20 - 0.20	Dark Brown	Loamy Sand	Stones	Vegetation
23748130	W129-1	0.20 - 0.20	Dark Brown	Sandy Clay Loam	Stones	Vegetation
23748135	W129-2	0.20 - 0.20	Dark Brown	Sandy Loam	Stones	Vegetation
23747982	W131-1	0.20 - 0.20	Dark Brown	Loamy Sand	Stones	Brick
23747988	W131-2	0.20 - 0.20	Dark Brown	Sandy Loam	Stones	Brick
23748000	W131-3	0.20 - 0.20	Black	Loamy Sand	Stones	None
23748009	W131-4	0.20 - 0.20	Dark Brown	Loamy Sand	Vegetation	Brick
23748017	W156-1	0.20 - 0.20	Dark Brown	Sandy Loam	Stones	None
23748032	W156-2	0.20 - 0.20	Dark Brown	Sandy Loam	Stones	Brick
23748046	W156-3	0.20 - 0.20	Dark Brown	Sandy Loam	Stones	None
23748052	W156-4	0.20 - 0.20	Dark Brown	Sandy Loam	Stones	None
23748060	W156-5	0.20 - 0.20	Dark Brown	Sandy Loam	Stones	Brick
23748067	W156-6	0.20 - 0.20	Dark Brown	Sand	N/A	Stones
23748072	W156-7	0.20 - 0.20	Dark Brown	Sandy Loam	Stones	None
23748077	W156-8	0.20 - 0.20	Dark Brown	Sandy Loam	Stones	Vegetation
23748084	W156-9	0.20 - 0.20	Dark Brown	Sandy Loam	Stones	Vegetation
23748094	W206-1	0.20 - 0.20	Dark Brown	Sandy Loam	Stones	None
23748105	W206-2	0.20 - 0.20	Black	Loamy Sand	Stones	Vegetation
23748115	W206-3	0.20 - 0.20	Dark Brown	Sandy Loam	Stones	Vegetation
23748120	W206-4	0.20 - 0.20	Black	Loamy Sand	Stones	N/A
23748200	W208-1	0.20 - 0.20	Dark Brown	Sandy Clay Loam	Stones	None
23748230	W208-2	0.20 - 0.20	Dark Brown	Sandy Clay Loam	Stones	None

CERTIFICATE OF ANALYSIS

SDG:	210218-32	**Client Reference:**	P18-669	**Report Number:**	589805
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	589801

			Colour	Description	Inclusions	Inclusions 2
23747937	W209-1	0.20 - 0.20	Light Brown	Silty Clay Loam	Stones	None
23747950	W209-2	0.20 - 0.20	Black	Silty Clay Loam	Stones	None
23747954	W209-3	0.20 - 0.20	Black	Sandy Silt Loam	Stones	Brick
23747961	W209-4	0.20 - 0.20	Dark Brown	Loamy Sand	Stones	Brick
23747966	W209-5	0.20 - 0.20	Dark Brown	Silty Clay Loam	Brick	Stones
23747973	W209-6	0.20 - 0.20	Black	Silty Clay Loam	Stones	None
23748089	W156-10	0.20 - 0.20	Black	Sandy Silt Loam	Stones	None
23748142	W209B-1	0.20 - 0.20	Dark Brown	Sandy Loam	Stones	None
23748146	W209B-2	0.20 - 0.20	Dark Brown	Sand	Vegetation	Stones
23748156	W209B-3	0.20 - 0.20	Dark Brown	Loamy Sand	Stones	Brick
23748161	W209B-4	0.20 - 0.20	Dark Brown	Sand	None	Stones
23748167	W209C-1	0.20 - 0.20	Dark Brown	Stone/Soil	None	Stones
23748178	W209C-2	0.20 - 0.20	Dark Brown	Sandy Loam	Stones	None
23748183	W209C-3	0.20 - 0.20	Dark Brown	Stone/Soil	None	Stones
23748191	W209C-4	0.20 - 0.20	Dark Brown	Sandy Loam	Stones	None

These descriptions are only intended to act as a cross check if sample identities are questioned, and to provide a log of sample matrices with respect to MCERTS validation. They are not intended as full geological descriptions.

We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally ocurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample.

Other coarse granular materials such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

Validated

CERTIFICATE OF ANALYSIS

SDG:	210218-32	**Client Reference:**	P18-669	**Report Number:**	589805
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	589801

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	SPDL-1	SPDL-2	SPDL-3	SPDL-4	SPJJ-1	SPJJ-2
			Depth (m)	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	16/02/2021	16/02/2021	16/02/2021	16/02/2021	16/02/2021	16/02/2021
			Sample Time	.	.	.	.	.	.
			Date Received	18/02/2021	18/02/2021	18/02/2021	18/02/2021	18/02/2021	18/02/2021
			SDG Ref	210218-32	210218-32	210218-32	210218-32	210218-32	210218-32
			Lab Sample No.(s)	23748251	23747881	23747887	23747896	23748172	23748234
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		14	18	14	14	12	10
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	<12 M	<12 M	<12 M	<12 M	<12 M
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 M	0.0122 M	<0.01 M	0.0116 M	<0.01 M	<0.01 M
Cresols	<0.01 mg/kg	TM062 (S)		0.0117 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Xylenols	<0.015 mg/kg	TM062 (S)		0.0351 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		0.0468 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M
Soil Organic Matter (SOM)	<0.35 %	TM132		23.3 #	21.9 #	15.4 #	24.1 #	4.03 #	6.62 #
pH	1 pH Units	TM133		8.33 M	8.98 M	8.18 M	8.78 M	8.73 M	8.95 M
Cyanide, Total	<1 mg/kg	TM153		26.8 M	46 M	26.9 M	46.7 M	<1 M	<1 M
Arsenic	<0.6 mg/kg	TM181		7.29 M	14 M	<6 M	9.28 M	8.86 M	13.2 M
Cadmium	<0.02 mg/kg	TM181		<0.2 M	0.497 M	<0.2 M	0.272 M	0.247 M	0.699 M
Chromium	<0.9 mg/kg	TM181		106 M	37.8 M	26.6 M	40.7 M	65.9 M	88.6 M
Copper	<1.4 mg/kg	TM181		24.1 M	25.6 M	30.5 M	39.8 M	14.6 M	25.7 M
Iron	<1000 mg/kg	TM181		67500 #	41200 #	65600 #	33400 #	50000 #	27300 #
Lead	<0.7 mg/kg	TM181		44.1 M	127 M	38.7 M	93.8 M	48 M	86.3 M
Manganese	<0.13 mg/kg	TM181		9420 M	2510 M	3810 M	3550 M	6920 M	5460 M
Mercury	<0.1 mg/kg	TM181		2.17 M	5.47 M	2.51 M	6.7 M	<1 M	<1 M
Nickel	<0.2 mg/kg	TM181		18.6 M	28.3 M	18.6 M	29.8 M	20.7 M	23.5 M
Selenium	<1 mg/kg	TM181		<10 #	<10 #	<10 #	1.62 #	<10 #	<10 #
Vanadium	<0.2 mg/kg	TM181		208 #	64.1 #	90.1 #	51.9 #	114 #	135 #
Zinc	<1.9 mg/kg	TM181		118 M	180 M	136 M	246 M	127 M	262 M
Asbestos Quantification - Gravimetric - %	<0.001 %	TM304						<0.001 #	
Asbestos Quantification - PCOM Evaluation - %	<0.001 %	TM304						<0.001 #	
Additional Asbestos Components (Using TM048)		TM304						None #	
Analysts Comments		TM304						0	
Asbestos Quantification - Total - %	<0.001 %	TM304						<0.001 #	

Validated

CERTIFICATE OF ANALYSIS

SDG:	210218-32	**Client Reference:**	P18-669	**Report Number:**	589805
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	589801

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	SPJJ-3	SPJJ-4	SPLB-1	SPLB-2	SPLB-3	SPLB-4
			Depth (m)	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	16/02/2021	16/02/2021	16/02/2021	16/02/2021	16/02/2021	16/02/2021
			Sample Time	.	.	.	.	.	.
			Date Received	18/02/2021	18/02/2021	18/02/2021	18/02/2021	18/02/2021	18/02/2021
			SDG Ref	210218-32	210218-32	210218-32	210218-32	210218-32	210218-32
			Lab Sample No.(s)	23748241	23748245	23747877	23747944	23748025	23748100
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		12	15	17	26	16	16
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	<12 M	<12 M	<12 M	<12 M	<12 M
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	0.0121 M	<0.01 M	0.0119 M	<0.01 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M
Soil Organic Matter (SOM)	<0.35 %	TM132		4.36 #	6.57 #	11.7 #	4.88 #	5.98 #	13.5 #
pH	1 pH Units	TM133		8.64 M	8.83 M	8.01 M	8.13 M	8.42 M	8.36 M
Cyanide, Total	<1 mg/kg	TM153		<1 M	<1 M	<1 M	<1 M	<1 M	<1 M
Arsenic	<0.6 mg/kg	TM181		7.67 M	7.53 M	16 M	10.8 M	8.95 M	12.8 M
Cadmium	<0.02 mg/kg	TM181		0.392 M	0.71 M	<0.2 M	<0.2 M	<0.2 M	<0.2 M
Chromium	<0.9 mg/kg	TM181		119 M	43.3 M	60.5 M	61.6 M	401 M	264 M
Copper	<1.4 mg/kg	TM181		<14 M	17.6 M	24.1 M	21.2 M	19.2 M	26.4 M
Iron	<1000 mg/kg	TM181		56500 #	35000 #	36500 #	43300 #	112000 #	78800 #
Lead	<0.7 mg/kg	TM181		58.1 M	49.5 M	51.6 M	39.6 M	34.1 M	72.7 M
Manganese	<0.13 mg/kg	TM181		7230 M	3530 M	2290 M	1230 M	34600 M	10300 M
Mercury	<0.1 mg/kg	TM181		<1 M	<1 M	<1 M	<1 M	<1 M	<1 M
Nickel	<0.2 mg/kg	TM181		21 M	25.3 M	31.2 M	39.5 M	19.5 M	32.9 M
Selenium	<1 mg/kg	TM181		<10 #	<10 #	<10 #	<10 #	19 #	<10 #
Vanadium	<0.2 mg/kg	TM181		136 #	80.2 #	99.5 #	81.2 #	235 #	192 #
Zinc	<1.9 mg/kg	TM181		114 M	127 M	139 M	142 M	87.3 M	215 M

Validated

CERTIFICATE OF ANALYSIS

SDG:	210218-32	**Client Reference:**	P18-669	**Report Number:**	589805
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	589801

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	W35-1	W35-2	W35-3	W35-4	W35-5	W35-6
			Depth (m)	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	16/02/2021	16/02/2021	16/02/2021	16/02/2021	16/02/2021	16/02/2021
			Sample Time	.	.	.	.	.	.
			Date Received	18/02/2021	18/02/2021	18/02/2021	18/02/2021	18/02/2021	18/02/2021
			SDG Ref	210218-32	210218-32	210218-32	210218-32	210218-32	210218-32
			Lab Sample No.(s)	23747902	23747909	23747914	23747921	23747924	23747930
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		13	12	11	15	10	12
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	<12 M	<12 M	<12 M	<12 M	<12 M
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 M	0.0113 M	<0.01 M	<0.01 M	0.0111 M	<0.01 M
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M	0.0111 M	<0.01 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M
Soil Organic Matter (SOM)	<0.35 %	TM132		59.3 #	3.17 #	5.5 #	29.5 #	2.98 #	7.93 #
pH	1 pH Units	TM133		12.1 M	11.7 M	9.01 M	12.1 M	12 M	8.95 M
Cyanide, Total	<1 mg/kg	TM153		<1 M	<1 M	<1 M	1.6 M	<1 M	<1 M
Arsenic	<0.6 mg/kg	TM181		7.27 M	7.11 M	9.62 M	8 M	7.46 M	11.6 M
Cadmium	<0.02 mg/kg	TM181		<0.2 M	0.241 M	<0.2 M	<0.2 M	<0.2 M	0.232 M
Chromium	<0.9 mg/kg	TM181		289 M	236 M	126 M	307 M	218 M	68.6 M
Copper	<1.4 mg/kg	TM181		36.6 M	125 M	20.1 M	553 M	32.2 M	24.3 M
Iron	<1000 mg/kg	TM181		120000 #	161000 #	71900 #	178000 #	114000 #	53900 #
Lead	<0.7 mg/kg	TM181		109 M	89.3 M	85.8 M	119 M	54.4 M	80.2 M
Manganese	<0.13 mg/kg	TM181		29900 M	31700 M	11400 M	37900 M	22700 M	7030 M
Mercury	<0.1 mg/kg	TM181		<1 M	<1 M	<1 M	<1 M	<1 M	<1 M
Nickel	<0.2 mg/kg	TM181		23.8 M	46.3 M	13.6 M	195 M	24.1 M	17.1 M
Selenium	<1 mg/kg	TM181		16.8 #	15.1 #	<10 #	19.3 #	16.8 #	<10 #
Vanadium	<0.2 mg/kg	TM181		638 #	391 #	155 #	770 #	262 #	108 #
Zinc	<1.9 mg/kg	TM181		131 M	321 M	619 M	179 M	110 M	657 M
Asbestos Quantification - Gravimetric - %	<0.001 %	TM304		<0.001 #				<0.001 #	
Asbestos Quantification - PCOM Evaluation - %	<0.001 %	TM304		<0.001 #				<0.001 #	
Additional Asbestos Components (Using TM048)		TM304		None #				None #	
Analysts Comments		TM304		N/a				0	
Asbestos Quantification - Total - %	<0.001 %	TM304		0.0015 #				<0.001 #	

Validated

CERTIFICATE OF ANALYSIS

SDG:	210218-32	**Client Reference:**	P18-669	**Report Number:**	589805
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	589801

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	W129-1	W129-2	W131-1	W131-2	W131-3	W131-4
			Depth (m)	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	17/02/2021	17/02/2021	17/02/2021	17/02/2021	17/02/2021	17/02/2021
			Sample Time	.	.	.	.	.	.
			Date Received	18/02/2021	18/02/2021	18/02/2021	18/02/2021	18/02/2021	18/02/2021
			SDG Ref	210218-32	210218-32	210218-32	210218-32	210218-32	210218-32
			Lab Sample No.(s)	23748130	23748135	23747982	23747988	23748000	23748009
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		11	12	11	12	12	12
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	<12 M	<12 M	<12 M	<12 M	<12 M
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M	0.0114 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M
Soil Organic Matter (SOM)	<0.35 %	TM132		15.2 #	10.2 #	5.83 #	4.5 #	4.41 #	18.3 #
pH	1 pH Units	TM133		8.74 M	9 M	9.16 M	8.95 M	8.63 M	8.88 M
Cyanide, Total	<1 mg/kg	TM153		<1 M	<1 M	1.11 M	<1 M	1.11 M	<1 M
Arsenic	<0.6 mg/kg	TM181		<6 M	8.13 M	9.03 M	12.7 M	19.4 M	11.1 M
Cadmium	<0.02 mg/kg	TM181		<0.2 M	<0.2 M	<0.2 M	<0.2 M	<0.2 M	0.376 M
Chromium	<0.9 mg/kg	TM181		89 M	133 M	26.1 M	62.2 M	10.9 M	124 M
Copper	<1.4 mg/kg	TM181		<14 M	18.2 M	41 M	25.1 M	45.5 M	28.6 M
Iron	<1000 mg/kg	TM181		28200 #	84600 #	148000 #	141000 #	233000 #	111000 #
Lead	<0.7 mg/kg	TM181		49.6 M	71.2 M	53.1 M	114 M	85.1 M	121 M
Manganese	<0.13 mg/kg	TM181		7860 M	10500 M	4520 M	6790 M	6260 M	10700 M
Mercury	<0.1 mg/kg	TM181		<1 M	<1 M	<1 M	<1 M	<1 M	<1 M
Nickel	<0.2 mg/kg	TM181		15.9 M	20.2 M	27.2 M	27.1 M	43.6 M	25.2 M
Selenium	<1 mg/kg	TM181		<10 #	<10 #	<10 #	<10 #	<10 #	<10 #
Vanadium	<0.2 mg/kg	TM181		350 #	404 #	99.9 #	137 #	99 #	193 #
Zinc	<1.9 mg/kg	TM181		153 M	212 M	168 M	353 M	299 M	373 M
Asbestos Quantification - Gravimetric - %	<0.001 %	TM304		<0.001 #					
Asbestos Quantification - PCOM Evaluation - %	<0.001 %	TM304		<0.001 #					
Additional Asbestos Components (Using TM048)		TM304		None #					
Analysts Comments		TM304		0					
Asbestos Quantification - Total - %	<0.001 %	TM304		<0.001 #					

Validated

CERTIFICATE OF ANALYSIS

SDG:	210218-32	**Client Reference:**	P18-669	**Report Number:**	589805
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	589801

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	W156-1	W156-2	W156-3	W156-4	W156-5	W156-6
			Depth (m)	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	17/02/2021	17/02/2021	17/02/2021	17/02/2021	17/02/2021	17/02/2021
			Sample Time	.	.	.	.	.	.
			Date Received	18/02/2021	18/02/2021	18/02/2021	18/02/2021	18/02/2021	18/02/2021
			SDG Ref	210218-32	210218-32	210218-32	210218-32	210218-32	210218-32
			Lab Sample No.(s)	23748017	23748032	23748046	23748052	23748060	23748067
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		15	15	15	12	13	15
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	<12 M	<12 M	<12 M	<12 M	<12 M
Phenol	<0.01 mg/kg	TM062 (S)		0.0118 M	<0.01 M	<0.01 M	<0.01 M	0.0114 M	0.0117 M
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M	0.0228 M	<0.01 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M
Soil Organic Matter (SOM)	<0.35 %	TM132		1.86 #	9.88 #	4.29 #	4.03 #	10.4 #	1.46 #
pH	1 pH Units	TM133		12.7 M	8.96 M	9.01 M	11.3 M	10.7 M	12.7 M
Cyanide, Total	<1 mg/kg	TM153		<1 M	3.3 M	<1 M	2.28 M	3.44 M	<1 M
Arsenic	<0.6 mg/kg	TM181		8.27 M	15.7 M	11.2 M	9.36 M	<6 M	13.6 M
Cadmium	<0.02 mg/kg	TM181		<0.2 M	3.53 M	<0.2 M	<0.2 M	<0.2 M	<0.2 M
Chromium	<0.9 mg/kg	TM181		553 M	<9 M	<9 M	155 M	218 M	514 M
Copper	<1.4 mg/kg	TM181		38.6 M	30 M	<14 M	21.7 M	24.4 M	45.7 M
Iron	<1000 mg/kg	TM181		212000 #	352000 #	178000 #	280000 #	156000 #	284000 #
Lead	<0.7 mg/kg	TM181		29.7 M	892 M	<7 M	82.7 M	48.7 M	31.4 M
Manganese	<0.13 mg/kg	TM181		48200 M	8360 M	284 M	19500 M	18400 M	39600 M
Mercury	<0.1 mg/kg	TM181		<1 M	1.25 M	2.06 M	<1 M	<1 M	<1 M
Nickel	<0.2 mg/kg	TM181		35.5 M	36 M	<2 M	23.2 M	19.8 M	40.6 M
Selenium	<1 mg/kg	TM181		27.7 #	<10 #	<10 #	<10 #	10.5 #	19.4 #
Vanadium	<0.2 mg/kg	TM181		848 #	165 #	2.73 #	550 #	885 #	1000 #
Zinc	<1.9 mg/kg	TM181		62.1 M	2180 M	<19 M	193 M	129 M	82.7 M
Asbestos Quantification - Gravimetric - %	<0.001 %	TM304						0.0349 #	
Asbestos Quantification - PCOM Evaluation - %	<0.001 %	TM304						0.0038 #	
Additional Asbestos Components (Using TM048)		TM304						PCM analysis detecte #	
Analysts Comments		TM304						N/A	
Asbestos Quantification - Total - %	<0.001 %	TM304						0.0387 #	

CERTIFICATE OF ANALYSIS

SDG:	210218-32	**Client Reference:**	P18-669	**Report Number:**	589805
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	589801

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	W156-7	W156-8	W156-9	W206-1	W206-2	W206-3
			Depth (m)	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	17/02/2021	17/02/2021	17/02/2021	17/02/2021	17/02/2021	17/02/2021
			Sample Time	.	.	.	.	.	.
			Date Received	18/02/2021	18/02/2021	18/02/2021	18/02/2021	18/02/2021	18/02/2021
			SDG Ref	210218-32	210218-32	210218-32	210218-32	210218-32	210218-32
			Lab Sample No.(s)	23748072	23748077	23748084	23748094	23748105	23748115
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		15	18	10	14	14	11
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	<12 M	<12 M	<12 M	<12 M	<12 M
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M
Soil Organic Matter (SOM)	<0.35 %	TM132		7.88 #	8.9 #	4.33 #	9.67 #	75.7 #	5.05 #
pH	1 pH Units	TM133		8.61 M	10.1 M	11.3 M	9.97 M	8.95 M	9.27 M
Cyanide, Total	<1 mg/kg	TM153		3.45 M	<1 M	4.84 M	<1 M	<1 M	<1 M
Arsenic	<0.6 mg/kg	TM181		24.9 M	9.46 M	7.27 M	9.17 M	<6 M	7.44 M
Cadmium	<0.02 mg/kg	TM181		5.2 M	<0.2 M	<0.2 M	0.347 M	<0.2 M	<0.2 M
Chromium	<0.9 mg/kg	TM181		106 M	<9 M	225 M	97.9 M	105 M	222 M
Copper	<1.4 mg/kg	TM181		34.1 M	22.8 M	19.5 M	23.6 M	33.5 M	21.5 M
Iron	<1000 mg/kg	TM181		190000 #	243000 #	220000 #	83800 #	65100 #	91600 #
Lead	<0.7 mg/kg	TM181		1040 M	80.8 M	50.9 M	80.9 M	32.7 M	75.7 M
Manganese	<0.13 mg/kg	TM181		13900 M	7350 M	31400 M	7320 M	7680 M	11400 M
Mercury	<0.1 mg/kg	TM181		<1 M	<1 M	<1 M	<1 M	<1 M	<1 M
Nickel	<0.2 mg/kg	TM181		35.1 M	26.2 M	16.4 M	29.8 M	21 M	24.7 M
Selenium	<1 mg/kg	TM181		<10 #	<10 #	12.4 #	<10 #	<10 #	<10 #
Vanadium	<0.2 mg/kg	TM181		223 #	168 #	1120 #	217 #	236 #	251 #
Zinc	<1.9 mg/kg	TM181		2560 M	233 M	116 M	241 M	92.1 M	274 M
Asbestos Quantification - Gravimetric - %	<0.001 %	TM304					<0.001 #		
Asbestos Quantification - PCOM Evaluation - %	<0.001 %	TM304					<0.001 #		
Additional Asbestos Components (Using TM048)		TM304					None #		
Analysts Comments		TM304					0		
Asbestos Quantification - Total - %	<0.001 %	TM304					<0.001 #		

Validated

CERTIFICATE OF ANALYSIS

SDG:	210218-32	**Client Reference:**	P18-669	**Report Number:**	589805
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	589801

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	W206-4	W208-1	W208-2	W209-1	W209-2	W209-3
			Depth (m)	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	17/02/2021	17/02/2021	17/02/2021	17/02/2021	17/02/2021	17/02/2021
			Sample Time	.	.	.	.	.	.
			Date Received	18/02/2021	18/02/2021	18/02/2021	18/02/2021	18/02/2021	18/02/2021
			SDG Ref	210218-32	210218-32	210218-32	210218-32	210218-32	210218-32
			Lab Sample No.(s)	23748120	23748200	23748230	23747937	23747950	23747954
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		18	13	17	12	15	13
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	<12 M	<12 M	<12 M	<12 M	<12 M
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M	<0.015 M	0.475 M	<0.015 M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 M	<0.035 M	0.475 M	<0.035 M	<0.035 M
Soil Organic Matter (SOM)	<0.35 %	TM132		54.8 #	4.12 #	6.86 #	11.4 #	33.8 #	49.1 #
pH	1 pH Units	TM133		8.43 M	10.4 M	10.6 M	8.83 M	8.97 M	8.96 M
Cyanide, Total	<1 mg/kg	TM153		<1 M	<1 M	<1 M	36.1 M	35.9 M	124 M
Arsenic	<0.6 mg/kg	TM181		8.56 M	17.8 M	11.6 M	15.8 M	<6 M	10.1 M
Cadmium	<0.02 mg/kg	TM181		<0.2 M	0.382 M	0.448 M	<0.2 M	<0.2 M	<0.2 M
Chromium	<0.9 mg/kg	TM181		115 M	205 M	104 M	<9 M	142 M	70.2 M
Copper	<1.4 mg/kg	TM181		25.2 M	33.6 M	27.9 M	36.6 M	24.9 M	27.7 M
Iron	<1000 mg/kg	TM181		47800 #	63900 #	61700 #	274000 #	76900 #	90200 #
Lead	<0.7 mg/kg	TM181		32.6 M	146 M	105 M	304 M	158 M	270 M
Manganese	<0.13 mg/kg	TM181		6260 M	10100 M	6800 M	7720 M	6430 M	4820 M
Mercury	<0.1 mg/kg	TM181		<1 M	<1 M	<1 M	5.87 M	1.84 M	3.44 M
Nickel	<0.2 mg/kg	TM181		26.4 M	25.7 M	24.2 M	44.4 M	22.6 M	20.8 M
Selenium	<1 mg/kg	TM181		<10 #	<10 #	<10 #	<10 #	<10 #	<10 #
Vanadium	<0.2 mg/kg	TM181		304 #	163 #	150 #	129 #	114 #	72.5 #
Zinc	<1.9 mg/kg	TM181		87.6 M	264 M	285 M	694 M	216 M	191 M

Validated

CERTIFICATE OF ANALYSIS

SDG:	210218-32	**Client Reference:**	P18-669	**Report Number:**	589805
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	589801

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	W209-4	W209-5	W209-6	W156-10	W209B-1	W209B-2
			Depth (m)	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	17/02/2021	17/02/2021	17/02/2021	17/02/2021	17/02/2021	17/02/2021
			Sample Time	.	.	.	.	.	.
			Date Received	18/02/2021	18/02/2021	18/02/2021	18/02/2021	18/02/2021	18/02/2021
			SDG Ref	210218-32	210218-32	210218-32	210218-32	210218-32	210218-32
			Lab Sample No.(s)	23747961	23747966	23747973	23748089	23748142	23748146
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		14	12	12	11	14	16
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	<12 M	<12 M	<12 M	<12 M	<12 M
Phenol	<0.01 mg/kg	TM062 (S)		0.0116 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Cresols	<0.01 mg/kg	TM062 (S)		0.0232 M	<0.01 M	<0.01 M	0.0112 M	<0.01 M	<0.01 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M
Soil Organic Matter (SOM)	<0.35 %	TM132		17.4 #	21.6 #	33.8 #	7.53 #	46.4 #	64.1 #
pH	1 pH Units	TM133		9.08 M	9.15 M	8.71 M	10.4 M	9.32 M	8.93 M
Cyanide, Total	<1 mg/kg	TM153		273 M	41.7 M	31.5 M	1.84 M	1.96 M	4.05 M
Arsenic	<0.6 mg/kg	TM181		12.6 M	11 M	9.56 M	<6 M	9.46 M	8.55 M
Cadmium	<0.02 mg/kg	TM181		0.537 M	<0.2 M	<0.2 M	<0.2 M	<0.2 M	<0.2 M
Chromium	<0.9 mg/kg	TM181		32.3 M	35.5 M	52.2 M	214 M	49 M	38.2 M
Copper	<1.4 mg/kg	TM181		30 M	20 M	33.2 M	19 M	33.5 M	24.7 M
Iron	<1000 mg/kg	TM181		236000 #	22100 #	79700 #	170000 #	85300 #	84200 #
Lead	<0.7 mg/kg	TM181		362 M	127 M	102 M	59.5 M	78 M	71.2 M
Manganese	<0.13 mg/kg	TM181		8310 M	4410 M	4440 M	25900 M	5670 M	8710 M
Mercury	<0.1 mg/kg	TM181		6.12 M	3.73 M	2.36 M	<1 M	<1 M	<1 M
Nickel	<0.2 mg/kg	TM181		36.4 M	24.7 M	20.9 M	14.9 M	30.3 M	24.5 M
Selenium	<1 mg/kg	TM181		<10 #	<10 #	<10 #	17.9 #	<10 #	<10 #
Vanadium	<0.2 mg/kg	TM181		172 #	79.1 #	131 #	1430 #	137 #	77.9 #
Zinc	<1.9 mg/kg	TM181		831 M	245 M	144 M	152 M	172 M	172 M
Asbestos Quantification - Gravimetric - %	<0.001 %	TM304			<0.001 #				
Asbestos Quantification - PCOM Evaluation - %	<0.001 %	TM304			<0.001 #				
Additional Asbestos Components (Using TM048)		TM304			None #				
Analysts Comments		TM304			0				
Asbestos Quantification - Total - %	<0.001 %	TM304			<0.001 #				

Validated

CERTIFICATE OF ANALYSIS

SDG:	210218-32	**Client Reference:**	P18-669	**Report Number:**	589805
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	589801

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	W209B-3	W209B-4	W209C-1	W209C-2	W209C-3	W209C-4
			Depth (m)	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	17/02/2021	17/02/2021	17/02/2021	17/02/2021	17/02/2021	17/02/2021
			Sample Time	.	.	.	.	.	.
			Date Received	18/02/2021	18/02/2021	18/02/2021	18/02/2021	18/02/2021	18/02/2021
			SDG Ref	210218-32	210218-32	210218-32	210218-32	210218-32	210218-32
			Lab Sample No.(s)	23748156	23748161	23748167	23748178	23748183	23748191
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		9.9	15	10	11	12	11
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	<12 M	<12 #	<12 M	<12 #	<12 M
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 #	<0.01 M	<0.01 #	<0.01 M
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	0.0222 #	<0.01 M	<0.01 #	0.0112 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M	<0.015 #	<0.015 M	<0.015 #	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 M	<0.035 #	<0.035 M	<0.035 #	<0.035 M
Soil Organic Matter (SOM)	<0.35 %	TM132		20.3 #	50.3 #	6.84 #	6.9 #	4.84 #	4.64 #
pH	1 pH Units	TM133		8.88 M	9.11 M	10 #	9.64 M	10.6 #	9.58 M
Cyanide, Total	<1 mg/kg	TM153		5.82 M	2.7 M	<1 #	4.41 M	<1 #	2.07 M
Arsenic	<0.6 mg/kg	TM181		<6 M	8.52 M	<6 #	8.2 M	9.58 #	<6 M
Cadmium	<0.02 mg/kg	TM181		<0.2 M	<0.2 M	<0.2 #	<0.2 M	0.212 #	<0.2 M
Chromium	<0.9 mg/kg	TM181		194 M	93.2 M	66.8 #	70 M	213 #	91 M
Copper	<1.4 mg/kg	TM181		24.7 M	21.9 M	<14 #	25.3 M	45.5 #	67.5 M
Iron	<1000 mg/kg	TM181		136000 #	80400 #	76600 #	84600 #	111000 #	58200 #
Lead	<0.7 mg/kg	TM181		79.6 M	72.2 M	67.7 #	202 M	125 #	64.1 M
Manganese	<0.13 mg/kg	TM181		18000 M	10600 M	6420 #	6890 M	20300 #	3960 M
Mercury	<0.1 mg/kg	TM181		<1 M	<1 M	<1 #	<1 M	<1 #	<1 M
Nickel	<0.2 mg/kg	TM181		15.4 M	22.4 M	12.1 #	29.1 M	20.4 #	27.9 M
Selenium	<1 mg/kg	TM181		14 #	<10 #	<10 #	<10 #	13.7 #	<10 #
Vanadium	<0.2 mg/kg	TM181		407 #	173 #	115 #	78.9 #	503 #	105 #
Zinc	<1.9 mg/kg	TM181		177 M	126 M	170 #	374 M	308 #	3020 M
Asbestos Quantification - Gravimetric - %	<0.001 %	TM304						<0.001 #	
Asbestos Quantification - PCOM Evaluation - %	<0.001 %	TM304						<0.001 #	
Additional Asbestos Components (Using TM048)		TM304						None #	
Analysts Comments		TM304						0	
Asbestos Quantification - Total - %	<0.001 %	TM304						<0.001 #	

Validated

CERTIFICATE OF ANALYSIS

SDG:	210218-32	**Client Reference:**	P18-669	**Report Number:**	589805
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	589801

PAH by GCMS

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	SPDL-1	SPDL-2	SPDL-3	SPDL-4	SPJJ-1	SPJJ-2
			Depth (m)	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	16/02/2021	16/02/2021	16/02/2021	16/02/2021	16/02/2021	16/02/2021
			Sample Time	.	.	.	.	.	.
			Date Received	18/02/2021	18/02/2021	18/02/2021	18/02/2021	18/02/2021	18/02/2021
			SDG Ref	210218-32	210218-32	210218-32	210218-32	210218-32	210218-32
			Lab Sample No.(s)	23748251	23747881	23747887	23747896	23748172	23748234
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		95.5	89.7	92.2	91.1	97.2	92.3
Acenaphthene-d10 % recovery**	%	TM218		96.4	83.7	93.2	92.9	91.6	96.4
Phenanthrene-d10 % recovery**	%	TM218		101	94.9	94.8	95	89.6	99.7
Chrysene-d12 % recovery**	%	TM218		77.1	91	82.4	78.4	80.6	83.2
Perylene-d12 % recovery**	%	TM218		77.3	85.2	84.1	78.1	78	84.6
Naphthalene	<9 µg/kg	TM218		5310 M	3440 M	5400 M	2610 M	78.7 M	52.8 M
Acenaphthylene	<12 µg/kg	TM218		1960 M	2340 M	1800 M	2530 M	65.7 M	54.6 M
Acenaphthene	<8 µg/kg	TM218		150 M	97.7 M	131 M	96.6 M	10.1 M	12.6 M
Fluorene	<10 µg/kg	TM218		288 M	319 M	294 M	316 M	34 M	28.3 M
Phenanthrene	<15 µg/kg	TM218		2120 M	3240 M	2770 M	2980 M	335 M	266 M
Anthracene	<16 µg/kg	TM218		794 M	1590 M	923 M	1440 M	129 M	72.7 M
Fluoranthene	<17 µg/kg	TM218		3250 M	6230 M	4590 M	5290 M	945 M	592 M
Pyrene	<15 µg/kg	TM218		2400 M	4590 M	3360 M	3840 M	685 M	486 M
Benz(a)anthracene	<14 µg/kg	TM218		1400 M	3030 M	2210 M	2430 M	453 M	286 M
Chrysene	<10 µg/kg	TM218		1550 M	3740 M	2020 M	2540 M	441 M	301 M
Benzo(b)fluoranthene	<15 µg/kg	TM218		2890 M	5500 M	4370 M	4850 M	609 M	487 M
Benzo(k)fluoranthene	<14 µg/kg	TM218		899 M	1700 M	1350 M	1480 M	175 M	168 M
Benzo(a)pyrene	<15 µg/kg	TM218		1740 M	3240 M	2590 M	2700 M	333 M	293 M
Indeno(1,2,3-cd)pyrene	<18 µg/kg	TM218		2660 M	4970 M	4340 M	4580 M	280 M	202 M
Dibenzo(a,h)anthracene	<23 µg/kg	TM218		389 M	743 M	509 M	579 M	66.7 M	47.9 M
Benzo(g,h,i)perylene	<24 µg/kg	TM218		3530 M	5430 M	4430 M	4760 M	264 M	246 M
PAH, Total Detected USEPA 16	<118 µg/kg	TM218		31300	50200	41100	43000	4900	3600

Validated

CERTIFICATE OF ANALYSIS

SDG:	210218-32	**Client Reference:**	P18-669	**Report Number:**	589805
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	589801

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	SPJJ-3	SPJJ-4	SPLB-1	SPLB-2	SPLB-3	SPLB-4
			Depth (m)	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	16/02/2021	16/02/2021	16/02/2021	16/02/2021	16/02/2021	16/02/2021
			Sample Time	.	.	.	.	.	.
			Date Received	18/02/2021	18/02/2021	18/02/2021	18/02/2021	18/02/2021	18/02/2021
			SDG Ref	210218-32	210218-32	210218-32	210218-32	210218-32	210218-32
			Lab Sample No.(s)	23748241	23748245	23747877	23747944	23748025	23748100
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		92	93	98.1	92.6	93.6	92.5
Acenaphthene-d10 % recovery**	%	TM218		88.1	84.3	93.9	94.1	96.8	96.1
Phenanthrene-d10 % recovery**	%	TM218		88.9	94.9	92.5	93.2	99.2	98.1
Chrysene-d12 % recovery**	%	TM218		84.2	94.3	84.2	83	81.8	79
Perylene-d12 % recovery**	%	TM218		86.4	91.6	83	83.3	82.9	80
Naphthalene	<9 µg/kg	TM218		95.9 M	81.2 M	540 M	92.8 M	588 M	334 M
Acenaphthylene	<12 µg/kg	TM218		80.7 M	83.5 M	164 M	32.8 M	211 M	158 M
Acenaphthene	<8 µg/kg	TM218		10.1 M	<8 M	37.2 M	<8 M	39.3 M	37.1 M
Fluorene	<10 µg/kg	TM218		33.3 M	41.3 M	150 M	40.1 M	166 M	109 M
Phenanthrene	<15 µg/kg	TM218		366 M	402 M	658 M	205 M	928 M	560 M
Anthracene	<16 µg/kg	TM218		110 M	111 M	289 M	64.1 M	292 M	401 M
Fluoranthene	<17 µg/kg	TM218		1170 M	1100 M	1050 M	250 M	1670 M	1250 M
Pyrene	<15 µg/kg	TM218		913 M	837 M	768 M	179 M	1220 M	967 M
Benz(a)anthracene	<14 µg/kg	TM218		520 M	524 M	477 M	109 M	694 M	572 M
Chrysene	<10 µg/kg	TM218		476 M	543 M	505 M	92.5 M	703 M	794 M
Benzo(b)fluoranthene	<15 µg/kg	TM218		755 M	790 M	732 M	143 M	1040 M	977 M
Benzo(k)fluoranthene	<14 µg/kg	TM218		287 M	254 M	235 M	42.7 M	316 M	325 M
Benzo(a)pyrene	<15 µg/kg	TM218		474 M	466 M	421 M	85.8 M	621 M	569 M
Indeno(1,2,3-cd)pyrene	<18 µg/kg	TM218		367 M	406 M	354 M	65.3 M	444 M	383 M
Dibenzo(a,h)anthracene	<23 µg/kg	TM218		60.2 M	81 M	82.7 M	<23 M	91.2 M	83.1 M
Benzo(g,h,i)perylene	<24 µg/kg	TM218		365 M	388 M	341 M	63.5 M	465 M	428 M
PAH, Total Detected USEPA 16	<118 µg/kg	TM218		6080	6110	6810	1460	9490	7950

Validated

CERTIFICATE OF ANALYSIS

SDG:	210218-32	**Client Reference:**	P18-669	**Report Number:**	589805
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	589801

PAH by GCMS

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	W35-1	W35-2	W35-3	W35-4	W35-5	W35-6
			Depth (m)	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	16/02/2021	16/02/2021	16/02/2021	16/02/2021	16/02/2021	16/02/2021
			Sample Time	.	.	.	.	.	.
			Date Received	18/02/2021	18/02/2021	18/02/2021	18/02/2021	18/02/2021	18/02/2021
			SDG Ref	210218-32	210218-32	210218-32	210218-32	210218-32	210218-32
			Lab Sample No.(s)	23747902	23747909	23747914	23747921	23747924	23747930
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		93.4	96.9	97.4	93	92.6	87.7
Acenaphthene-d10 % recovery**	%	TM218		97.3	93.9	93.8	100	93.2	89.4
Phenanthrene-d10 % recovery**	%	TM218		97.6	95.3	90.2	104	94.9	91.1
Chrysene-d12 % recovery**	%	TM218		78.4	84.8	80.6	82.9	83.2	87.3
Perylene-d12 % recovery**	%	TM218		75.8	80.8	77.5	85.7	84.6	79.4
Naphthalene	<9 µg/kg	TM218		1500 M	435 M	<90 M	1470 M	285 M	84.7 M
Acenaphthylene	<12 µg/kg	TM218		89.1 M	97.8 M	<120 M	188 M	97.4 M	<60 M
Acenaphthene	<8 µg/kg	TM218		359 M	115 M	<80 M	449 M	71.1 M	<40 M
Fluorene	<10 µg/kg	TM218		265 M	83 M	<100 M	374 M	70.5 M	<50 M
Phenanthrene	<15 µg/kg	TM218		3430 M	1670 M	290 M	5160 M	1340 M	315 M
Anthracene	<16 µg/kg	TM218		620 M	351 M	<160 M	1290 M	387 M	101 M
Fluoranthene	<17 µg/kg	TM218		3760 M	3420 M	603 M	7050 M	2770 M	1080 M
Pyrene	<15 µg/kg	TM218		3170 M	3200 M	488 M	5960 M	2370 M	893 M
Benz(a)anthracene	<14 µg/kg	TM218		1670 M	2270 M	316 M	3470 M	1690 M	616 M
Chrysene	<10 µg/kg	TM218		1830 M	2600 M	354 M	3590 M	1740 M	737 M
Benzo(b)fluoranthene	<15 µg/kg	TM218		2430 M	3650 M	569 M	4460 M	2630 M	1150 M
Benzo(k)fluoranthene	<14 µg/kg	TM218		705 M	1240 M	172 M	1430 M	883 M	378 M
Benzo(a)pyrene	<15 µg/kg	TM218		1430 M	2300 M	325 M	2980 M	1690 M	590 M
Indeno(1,2,3-cd)pyrene	<18 µg/kg	TM218		827 M	1740 M	348 M	1800 M	1440 M	628 M
Dibenzo(a,h)anthracene	<23 µg/kg	TM218		204 M	420 M	<230 M	359 M	242 M	<115 M
Benzo(g,h,i)perylene	<24 µg/kg	TM218		1030 M	1800 M	361 M	1910 M	1300 M	547 M
PAH, Total Detected USEPA 16	<118 µg/kg	TM218		23300	25400	3830	41900	19000	7130

Validated

CERTIFICATE OF ANALYSIS

SDG:	210218-32	**Client Reference:**	P18-669	**Report Number:**	589805
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	589801

PAH by GCMS

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	W129-1	W129-2	W131-1	W131-2	W131-3	W131-4
			Depth (m)	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	17/02/2021	17/02/2021	17/02/2021	17/02/2021	17/02/2021	17/02/2021
			Sample Time	.	.	.	.	.	.
			Date Received	18/02/2021	18/02/2021	18/02/2021	18/02/2021	18/02/2021	18/02/2021
			SDG Ref	210218-32	210218-32	210218-32	210218-32	210218-32	210218-32
			Lab Sample No.(s)	23748130	23748135	23747982	23747988	23748000	23748009
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		92.7	93.2	89.6	92.8	90.2	97.1
Acenaphthene-d10 % recovery**	%	TM218		94.9	89.8	87.7	95.6	89	95.5
Phenanthrene-d10 % recovery**	%	TM218		95.9	90.4	90.6	97.5	90.2	95.4
Chrysene-d12 % recovery**	%	TM218		79.4	82.6	88.4	97.4	76.5	79.7
Perylene-d12 % recovery**	%	TM218		78.5	75.3	86	93.3	70.9	76.5
Naphthalene	<9 µg/kg	TM218		299 M	234 M	100 M	95 M	48.5 M	44.9 M
Acenaphthylene	<12 µg/kg	TM218		116 M	159 M	136 M	45.8 M	16.2 M	52 M
Acenaphthene	<8 µg/kg	TM218		248 M	42 M	26 M	11.7 M	<8 M	12 M
Fluorene	<10 µg/kg	TM218		157 M	82.6 M	290 M	19 M	14 M	20 M
Phenanthrene	<15 µg/kg	TM218		1610 M	976 M	1260 M	204 M	138 M	183 M
Anthracene	<16 µg/kg	TM218		430 M	271 M	261 M	49.8 M	28.2 M	<16 M
Fluoranthene	<17 µg/kg	TM218		2400 M	2060 M	1360 M	452 M	177 M	438 M
Pyrene	<15 µg/kg	TM218		2060 M	1560 M	834 M	389 M	137 M	380 M
Benz(a)anthracene	<14 µg/kg	TM218		1140 M	956 M	471 M	285 M	91.3 M	237 M
Chrysene	<10 µg/kg	TM218		1150 M	1000 M	425 M	324 M	108 M	271 M
Benzo(b)fluoranthene	<15 µg/kg	TM218		1610 M	1270 M	570 M	546 M	144 M	447 M
Benzo(k)fluoranthene	<14 µg/kg	TM218		509 M	460 M	209 M	173 M	44.5 M	111 M
Benzo(a)pyrene	<15 µg/kg	TM218		1120 M	766 M	328 M	322 M	73.7 M	246 M
Indeno(1,2,3-cd)pyrene	<18 µg/kg	TM218		635 M	591 M	262 M	291 M	70.5 M	224 M
Dibenzo(a,h)anthracene	<23 µg/kg	TM218		130 M	135 M	46.7 M	58.4 M	<23 M	<23 M
Benzo(g,h,i)perylene	<24 µg/kg	TM218		727 M	548 M	231 M	281 M	68.6 M	236 M
PAH, Total Detected USEPA 16	<118 µg/kg	TM218		14300	11100	6810	3550	1160	2900

Validated

CERTIFICATE OF ANALYSIS

SDG:	210218-32	**Client Reference:**	P18-669	**Report Number:**	589805
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	589801

PAH by GCMS

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	W156-1	W156-2	W156-3	W156-4	W156-5	W156-6
			Depth (m)	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	17/02/2021	17/02/2021	17/02/2021	17/02/2021	17/02/2021	17/02/2021
			Sample Time	.	.	.	.	.	.
			Date Received	18/02/2021	18/02/2021	18/02/2021	18/02/2021	18/02/2021	18/02/2021
			SDG Ref	210218-32	210218-32	210218-32	210218-32	210218-32	210218-32
			Lab Sample No.(s)	23748017	23748032	23748046	23748052	23748060	23748067
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		91.6	94	92.3	91.6	92.6	91.7
Acenaphthene-d10 % recovery**	%	TM218		93.1	89.9	94.2	90.2	93.4	88.4
Phenanthrene-d10 % recovery**	%	TM218		95.5	90.2	96	93.3	89.8	87.2
Chrysene-d12 % recovery**	%	TM218		79.1	78.7	82.9	81.5	78.6	79.6
Perylene-d12 % recovery**	%	TM218		79.9	70.3	82.4	72.4	78.8	77.7
Naphthalene	<9 µg/kg	TM218		358 M	3270 M	3630 M	3200 M	5690 M	553 M
Acenaphthylene	<12 µg/kg	TM218		42.9 M	50.9 M	366 M	758 M	5810 M	76 M
Acenaphthene	<8 µg/kg	TM218		109 M	16.7 M	53.3 M	78.3 M	364 M	135 M
Fluorene	<10 µg/kg	TM218		64.6 M	39.2 M	220 M	440 M	7260 M	92.2 M
Phenanthrene	<15 µg/kg	TM218		986 M	294 M	1470 M	7030 M	102000 M	1280 M
Anthracene	<16 µg/kg	TM218		202 M	64.6 M	368 M	2670 M	41600 M	274 M
Fluoranthene	<17 µg/kg	TM218		1970 M	383 M	2240 M	14100 M	139000 M	2540 M
Pyrene	<15 µg/kg	TM218		1910 M	323 M	1630 M	10600 M	102000 M	2370 M
Benz(a)anthracene	<14 µg/kg	TM218		1200 M	174 M	885 M	4440 M	37900 M	1430 M
Chrysene	<10 µg/kg	TM218		1240 M	171 M	785 M	4910 M	40800 M	1490 M
Benzo(b)fluoranthene	<15 µg/kg	TM218		1920 M	284 M	1250 M	6280 M	51200 M	2240 M
Benzo(k)fluoranthene	<14 µg/kg	TM218		725 M	89.1 M	412 M	2060 M	15100 M	839 M
Benzo(a)pyrene	<15 µg/kg	TM218		1500 M	172 M	847 M	4120 M	34400 M	1590 M
Indeno(1,2,3-cd)pyrene	<18 µg/kg	TM218		879 M	149 M	711 M	3530 M	30800 M	1200 M
Dibenzo(a,h)anthracene	<23 µg/kg	TM218		162 M	32.1 M	110 M	648 M	4020 M	236 M
Benzo(g,h,i)perylene	<24 µg/kg	TM218		1010 M	163 M	639 M	3490 M	27100 M	1180 M
PAH, Total Detected USEPA 16	<118 µg/kg	TM218		14300	5680	15600	68400	645000	17500

Validated

CERTIFICATE OF ANALYSIS

SDG:	210218-32	**Client Reference:**	P18-669	**Report Number:**	589805
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	589801

PAH by GCMS

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	W156-7	W156-8	W156-9	W206-1	W206-2	W206-3
			Depth (m)	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	17/02/2021	17/02/2021	17/02/2021	17/02/2021	17/02/2021	17/02/2021
			Sample Time	.	.	.	.	.	.
			Date Received	18/02/2021	18/02/2021	18/02/2021	18/02/2021	18/02/2021	18/02/2021
			SDG Ref	210218-32	210218-32	210218-32	210218-32	210218-32	210218-32
			Lab Sample No.(s)	23748072	23748077	23748084	23748094	23748105	23748115
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		87.9	92.3	92.1	93.6	91.4	93.3
Acenaphthene-d10 % recovery**	%	TM218		86.8	96.5	96.8	90.5	92.4	93.2
Phenanthrene-d10 % recovery**	%	TM218		91.2	100	98.4	90.9	91.6	94
Chrysene-d12 % recovery**	%	TM218		79	81.1	79.3	84	80.1	82.5
Perylene-d12 % recovery**	%	TM218		70.1	81.7	80.1	80.9	75.5	82.3
Naphthalene	<9 µg/kg	TM218		4410 M	2520 M	2940 M	246 M	892 M	271 M
Acenaphthylene	<12 µg/kg	TM218		65.5 M	202 M	469 M	157 M	169 M	154 M
Acenaphthene	<8 µg/kg	TM218		30.7 M	35.2 M	90.3 M	19.3 M	125 M	21 M
Fluorene	<10 µg/kg	TM218		73.3 M	150 M	381 M	90.3 M	257 M	88.3 M
Phenanthrene	<15 µg/kg	TM218		503 M	945 M	2380 M	655 M	1570 M	717 M
Anthracene	<16 µg/kg	TM218		135 M	234 M	674 M	213 M	309 M	218 M
Fluoranthene	<17 µg/kg	TM218		622 M	1400 M	3650 M	1580 M	1880 M	1700 M
Pyrene	<15 µg/kg	TM218		577 M	1080 M	3030 M	1140 M	1430 M	1240 M
Benz(a)anthracene	<14 µg/kg	TM218		248 M	492 M	1510 M	686 M	857 M	743 M
Chrysene	<10 µg/kg	TM218		241 M	481 M	1540 M	675 M	876 M	631 M
Benzo(b)fluoranthene	<15 µg/kg	TM218		392 M	718 M	2380 M	960 M	1200 M	1080 M
Benzo(k)fluoranthene	<14 µg/kg	TM218		103 M	239 M	714 M	297 M	397 M	329 M
Benzo(a)pyrene	<15 µg/kg	TM218		215 M	443 M	1460 M	556 M	689 M	631 M
Indeno(1,2,3-cd)pyrene	<18 µg/kg	TM218		171 M	273 M	1040 M	430 M	491 M	514 M
Dibenzo(a,h)anthracene	<23 µg/kg	TM218		29.3 M	63 M	209 M	106 M	149 M	89 M
Benzo(g,h,i)perylene	<24 µg/kg	TM218		172 M	318 M	1160 M	424 M	515 M	442 M
PAH, Total Detected USEPA 16	<118 µg/kg	TM218		7980	9590	23600	8240	11800	8870

Validated

CERTIFICATE OF ANALYSIS

SDG:	210218-32	**Client Reference:**	P18-669	**Report Number:**	589805
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	589801

PAH by GCMS

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	W206-4	W208-1	W208-2	W209-1	W209-2	W209-3
			Depth (m)	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	17/02/2021	17/02/2021	17/02/2021	17/02/2021	17/02/2021	17/02/2021
			Sample Time	.	.	.	.	.	.
			Date Received	18/02/2021	18/02/2021	18/02/2021	18/02/2021	18/02/2021	18/02/2021
			SDG Ref	210218-32	210218-32	210218-32	210218-32	210218-32	210218-32
			Lab Sample No.(s)	23748120	23748200	23748230	23747937	23747950	23747954
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		91.1	92.4	95.2	95.1	92.7	89.8
Acenaphthene-d10 % recovery**	%	TM218		92	93.9	91.6	96.9	92.5	92.9
Phenanthrene-d10 % recovery**	%	TM218		91.1	94.2	92.2	98.2	92.5	89.2
Chrysene-d12 % recovery**	%	TM218		78.5	78	83.3	80.3	82.8	75.2
Perylene-d12 % recovery**	%	TM218		72.3	79.3	80.3	76.5	78.7	71.8
Naphthalene	<9 µg/kg	TM218		948 M	107 M	98.5 M	2770 M	1190 M	1320 M
Acenaphthylene	<12 µg/kg	TM218		197 M	83.6 M	76.1 M	4750 M	144 M	361 M
Acenaphthene	<8 µg/kg	TM218		153 M	19.2 M	21.9 M	452 M	61.7 M	63.1 M
Fluorene	<10 µg/kg	TM218		303 M	44.4 M	86.8 M	5140 M	118 M	321 M
Phenanthrene	<15 µg/kg	TM218		1990 M	318 M	530 M	17600 M	963 M	1920 M
Anthracene	<16 µg/kg	TM218		394 M	124 M	166 M	<16 M	307 M	419 M
Fluoranthene	<17 µg/kg	TM218		2920 M	799 M	835 M	24500 M	2010 M	2950 M
Pyrene	<15 µg/kg	TM218		2150 M	633 M	655 M	14900 M	1620 M	2220 M
Benz(a)anthracene	<14 µg/kg	TM218		1150 M	379 M	379 M	8920 M	1070 M	1400 M
Chrysene	<10 µg/kg	TM218		923 M	358 M	371 M	8600 M	941 M	1240 M
Benzo(b)fluoranthene	<15 µg/kg	TM218		1490 M	577 M	533 M	10800 M	1740 M	2400 M
Benzo(k)fluoranthene	<14 µg/kg	TM218		438 M	193 M	178 M	3240 M	561 M	701 M
Benzo(a)pyrene	<15 µg/kg	TM218		860 M	341 M	298 M	6770 M	1010 M	1380 M
Indeno(1,2,3-cd)pyrene	<18 µg/kg	TM218		596 M	219 M	245 M	5220 M	840 M	1150 M
Dibenzo(a,h)anthracene	<23 µg/kg	TM218		150 M	49.5 M	60.3 M	284 M	211 M	275 M
Benzo(g,h,i)perylene	<24 µg/kg	TM218		534 M	258 M	230 M	4100 M	865 M	1140 M
PAH, Total Detected USEPA 16	<118 µg/kg	TM218		15200	4500	4760	118000	13700	19300

Validated

CERTIFICATE OF ANALYSIS

SDG:	210218-32	**Client Reference:**	P18-669	**Report Number:**	589805
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	589801

PAH by GCMS

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	W209-4	W209-5	W209-6	W156-10	W209B-1	W209B-2
			Depth (m)	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	17/02/2021	17/02/2021	17/02/2021	17/02/2021	17/02/2021	17/02/2021
			Sample Time	.	.	.	.	.	.
			Date Received	18/02/2021	18/02/2021	18/02/2021	18/02/2021	18/02/2021	18/02/2021
			SDG Ref	210218-32	210218-32	210218-32	210218-32	210218-32	210218-32
			Lab Sample No.(s)	23747961	23747966	23747973	23748089	23748142	23748146
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		93.3	95.7	90.2	93.1	86.4	94.5
Acenaphthene-d10 % recovery**	%	TM218		97.7	90.9	94.3	96.5	83.1	87.6
Phenanthrene-d10 % recovery**	%	TM218		99.8	83.7	90.7	98.7	83.1	87.6
Chrysene-d12 % recovery**	%	TM218		83.6	80.1	77.5	79.8	76.4	79
Perylene-d12 % recovery**	%	TM218		77.3	82.2	71.1	80.5	77.1	66.6
Naphthalene	<9 µg/kg	TM218		9190 M	2100 M	1340 M	4760 M	514 M	439 M
Acenaphthylene	<12 µg/kg	TM218		9760 M	291 M	293 M	1380 M	319 M	145 M
Acenaphthene	<8 µg/kg	TM218		623 M	55.2 M	58.9 M	155 M	30.6 M	32.6 M
Fluorene	<10 µg/kg	TM218		11300 M	157 M	161 M	869 M	151 M	130 M
Phenanthrene	<15 µg/kg	TM218		34300 M	843 M	1350 M	5110 M	1460 M	1120 M
Anthracene	<16 µg/kg	TM218		16800 M	296 M	388 M	2210 M	408 M	302 M
Fluoranthene	<17 µg/kg	TM218		34300 M	2060 M	2780 M	8730 M	2990 M	1800 M
Pyrene	<15 µg/kg	TM218		22800 M	1640 M	2210 M	8290 M	2230 M	1460 M
Benz(a)anthracene	<14 µg/kg	TM218		13300 M	1510 M	1470 M	3790 M	1360 M	955 M
Chrysene	<10 µg/kg	TM218		12100 M	1460 M	1300 M	3830 M	1360 M	1020 M
Benzo(b)fluoranthene	<15 µg/kg	TM218		15500 M	2480 M	2820 M	5390 M	2230 M	1420 M
Benzo(k)fluoranthene	<14 µg/kg	TM218		4020 M	773 M	810 M	1810 M	691 M	390 M
Benzo(a)pyrene	<15 µg/kg	TM218		9200 M	1680 M	1630 M	3110 M	1280 M	786 M
Indeno(1,2,3-cd)pyrene	<18 µg/kg	TM218		6840 M	1490 M	1410 M	2070 M	1130 M	654 M
Dibenzo(a,h)anthracene	<23 µg/kg	TM218		389 M	257 M	315 M	423 M	175 M	162 M
Benzo(g,h,i)perylene	<24 µg/kg	TM218		5040 M	1350 M	1410 M	2260 M	1030 M	690 M
PAH, Total Detected USEPA 16	<118 µg/kg	TM218		206000	18400	19800	54200	17400	11500

Validated

CERTIFICATE OF ANALYSIS

SDG:	210218-32	**Client Reference:**	P18-669	**Report Number:**	589805
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	589801

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	W209B-3	W209B-4	W209C-1	W209C-2	W209C-3	W209C-4
			Depth (m)	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	17/02/2021	17/02/2021	17/02/2021	17/02/2021	17/02/2021	17/02/2021
			Sample Time	.	.	.	.	.	.
			Date Received	18/02/2021	18/02/2021	18/02/2021	18/02/2021	18/02/2021	18/02/2021
			SDG Ref	210218-32	210218-32	210218-32	210218-32	210218-32	210218-32
			Lab Sample No.(s)	23748156	23748161	23748167	23748178	23748183	23748191
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		93.3	94.1	92.4	93.4	93.1	94.4
Acenaphthene-d10 % recovery**	%	TM218		94.9	94.7	95.2	95.8	93.2	94
Phenanthrene-d10 % recovery**	%	TM218		95.5	95.3	92.6	97.2	94	94
Chrysene-d12 % recovery**	%	TM218		77.9	74.2	82.1	80.4	80.3	79.7
Perylene-d12 % recovery**	%	TM218		75.5	71	85	81	80.9	79.6
Naphthalene	<9 µg/kg	TM218		12200 M	522 M	1670 #	201 M	822 #	156 M
Acenaphthylene	<12 µg/kg	TM218		13200 M	219 M	3210 #	96.7 M	561 #	70.2 M
Acenaphthene	<8 µg/kg	TM218		822 M	48.8 M	565 #	23.9 M	43.4 #	19.9 M
Fluorene	<10 µg/kg	TM218		5120 M	177 M	5910 #	58.4 M	531 #	50.1 M
Phenanthrene	<15 µg/kg	TM218		52400 M	1540 M	25100 #	463 M	2450 #	295 M
Anthracene	<16 µg/kg	TM218		18500 M	392 M	10500 #	134 M	1590 #	123 M
Fluoranthene	<17 µg/kg	TM218		112000 M	2580 M	30900 #	942 M	4010 #	604 M
Pyrene	<15 µg/kg	TM218		82800 M	2070 M	18600 #	789 M	2960 #	478 M
Benz(a)anthracene	<14 µg/kg	TM218		51900 M	1420 M	9360 #	540 M	1490 #	303 M
Chrysene	<10 µg/kg	TM218		49000 M	1520 M	7280 #	595 M	1240 #	293 M
Benzo(b)fluoranthene	<15 µg/kg	TM218		78500 M	2590 M	9440 #	957 M	1930 #	524 M
Benzo(k)fluoranthene	<14 µg/kg	TM218		23300 M	545 M	3560 #	315 M	636 #	143 M
Benzo(a)pyrene	<15 µg/kg	TM218		45800 M	1440 M	6110 #	575 M	1120 #	290 M
Indeno(1,2,3-cd)pyrene	<18 µg/kg	TM218		44300 M	1320 M	4080 #	437 M	814 #	253 M
Dibenzo(a,h)anthracene	<23 µg/kg	TM218		7770 M	310 M	774 #	87.5 M	195 #	49.2 M
Benzo(g,h,i)perylene	<24 µg/kg	TM218		38300 M	1370 M	3220 #	500 M	722 #	254 M
PAH, Total Detected USEPA 16	<118 µg/kg	TM218		636000	18100	140000	6710	21100	3910

CERTIFICATE OF ANALYSIS

SDG:	210218-32	**Client Reference:**	P18-669	**Report Number:**	589805
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	589801

TPH CWG (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	SPDL-1	SPDL-2	SPDL-3	SPDL-4	SPJJ-1	SPJJ-2
			Depth (m)	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	16/02/2021	16/02/2021	16/02/2021	16/02/2021	16/02/2021	16/02/2021
			Sample Time	.	.	.	.	.	.
			Date Received	18/02/2021	18/02/2021	18/02/2021	18/02/2021	18/02/2021	18/02/2021
			SDG Ref	210218-32	210218-32	210218-32	210218-32	210218-32	210218-32
			Lab Sample No.(s)	23748251	23747881	23747887	23747896	23748172	23748234
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		77.9	41 4	76.3	74.3	76.2	93.9
Aliphatics >C5-C6	<10 µg/kg	TM089		18.7	<10 4	<10	<10	<10	<10
Aliphatics >C6-C8	<10 µg/kg	TM089		31.6	<10 4	10.4	25.5	<10	<10
Aliphatics >C8-C10	<10 µg/kg	TM089		58.5	<10 4	36	37.1	<10	<10
Aliphatics >C10-C12	<1000 µg/kg	TM414		<1000	<1000	<1000	<1000	<1000	<1000
Aliphatics >C12-C16	<1000 µg/kg	TM414		25600	3300	1430	2260	<1000	<1000
Aliphatics >C16-C21	<1000 µg/kg	TM414		756000	184000	101000	217000	<1000	2660
Aliphatics >C21-C35	<1000 µg/kg	TM414		154000	50000	9470	46300	3910	20200
Aliphatics >C35-C44	<1000 µg/kg	TM414		2350	<1000	<1000	<1000	<1000	4150
Total Aliphatics >C10-C44	<5000 µg/kg	TM414		938000	238000	113000	266000	<5000	27200
Total Aliphatics & Aromatics >C10-C44	<10000 µg/kg	TM414		1190000	596000	293000	522000	<10000	51800
Aromatics >EC5-EC7	<10 µg/kg	TM089		28.1	<10 4	39.4	13.9	<10	<10
Aromatics >EC7-EC8	<10 µg/kg	TM089		<10	<10 4	<10	<10	<10	<10
Aromatics >EC8-EC10	<10 µg/kg	TM089		38.6	<10 4	24.4	24.4	<10	<10
Aromatics > EC10-EC12	<1000 µg/kg	TM414		9890	4920	5620	4580	<1000	<1000
Aromatics > EC12-EC16	<1000 µg/kg	TM414		9730	10800	6920	10500	<1000	<1000
Aromatics > EC16-EC21	<1000 µg/kg	TM414		31900	49100	71500	50400	1250	2590
Aromatics > EC21-EC35	<1000 µg/kg	TM414		168000	255000	78500	157000	3150	19400
Aromatics >EC35-EC44	<1000 µg/kg	TM414		28400	38000	18000	33900	<1000	2600
Aromatics > EC40-EC44	<1000 µg/kg	TM414		5120	6860	2730	6920	<1000	<1000
Total Aromatics > EC10-EC44	<5000 µg/kg	TM414		248000	358000	180000	256000	5450	24600
Total Aliphatics & Aromatics >C5-C44	<10000 µg/kg	TM414		1190000	596000	293000	522000	<10000	51800
Total Aliphatics >C5-C10	<50 µg/kg	TM089		109	<50 4	<50	62.6	<50	<50
Total Aromatics >EC5-EC10	<50 µg/kg	TM089		66.7	<50 4	63.8	<50	<50	<50
GRO >C5-C10	<20 µg/kg	TM089		176	<20 4	63.8	62.6	<20	<20

Validated

CERTIFICATE OF ANALYSIS

SDG:	210218-32	**Client Reference:**	P18-669	**Report Number:**	589805
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	589801

TPH CWG (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	SPJJ-3	SPJJ-4	SPLB-1	SPLB-2	SPLB-3	SPLB-4
			Depth (m)	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	16/02/2021	16/02/2021	16/02/2021	16/02/2021	16/02/2021	16/02/2021
			Sample Time	.	.	.	.	.	.
			Date Received	18/02/2021	18/02/2021	18/02/2021	18/02/2021	18/02/2021	18/02/2021
			SDG Ref	210218-32	210218-32	210218-32	210218-32	210218-32	210218-32
			Lab Sample No.(s)	23748241	23748245	23747877	23747944	23748025	23748100
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		75.3	83.9	84.2	104	89.3	63.5 4
Aliphatics >C5-C6	<10 µg/kg	TM089		<10	<10	<10	<10	<10	<10 4
Aliphatics >C6-C8	<10 µg/kg	TM089		<10	<10	<10	<10	<10	<10 4
Aliphatics >C8-C10	<10 µg/kg	TM089		<10	16.5	<10	<10	<10	<10 4
Aliphatics >C10-C12	<1000 µg/kg	TM414		<1000	<1000	<1000	<1000	<1000	<1000
Aliphatics >C12-C16	<1000 µg/kg	TM414		<1000	<1000	<1000	<1000	<1000	<1000
Aliphatics >C16-C21	<1000 µg/kg	TM414		<1000	<1000	10000	<1000	1000	3640
Aliphatics >C21-C35	<1000 µg/kg	TM414		18400	3410	29900	4580	8670	8940
Aliphatics >C35-C44	<1000 µg/kg	TM414		2090	<1000	4090	<1000	<1000	<1000
Total Aliphatics >C10-C44	<5000 µg/kg	TM414		22000	<5000	44300	<5000	10400	13500
Total Aliphatics & Aromatics >C10-C44	<10000 µg/kg	TM414		48200	36500	82100	<10000	25300	24900
Aromatics >EC5-EC7	<10 µg/kg	TM089		<10	<10	<10	<10	<10	<10 4
Aromatics >EC7-EC8	<10 µg/kg	TM089		<10	<10	<10	<10	<10	<10 4
Aromatics >EC8-EC10	<10 µg/kg	TM089		<10	10.6	<10	<10	<10	<10 4
Aromatics > EC10-EC12	<1000 µg/kg	TM414		<1000	<1000	<1000	<1000	<1000	<1000
Aromatics > EC12-EC16	<1000 µg/kg	TM414		2090	<1000	<1000	<1000	<1000	<1000
Aromatics > EC16-EC21	<1000 µg/kg	TM414		6150	7850	5720	<1000	2630	1200
Aromatics > EC21-EC35	<1000 µg/kg	TM414		16500	21800	28900	1950	10900	8960
Aromatics >EC35-EC44	<1000 µg/kg	TM414		1450	2040	2180	<1000	1040	<1000
Aromatics > EC40-EC44	<1000 µg/kg	TM414		<1000	<1000	<1000	<1000	<1000	<1000
Total Aromatics > EC10-EC44	<5000 µg/kg	TM414		26200	32700	37800	<5000	14900	11400
Total Aliphatics & Aromatics >C5-C44	<10000 µg/kg	TM414		48200	32700	82100	<10000	25300	24900
Total Aliphatics >C5-C10	<50 µg/kg	TM089		<50	<50	<50	<50	<50	<50 4
Total Aromatics >EC5-EC10	<50 µg/kg	TM089		<50	<50	<50	<50	<50	<50 4
GRO >C5-C10	<20 µg/kg	TM089		<20	<20	<20	<20	<20	<20 4

Validated

CERTIFICATE OF ANALYSIS

SDG:	210218-32	**Client Reference:**	P18-669	**Report Number:**	589805
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	589801

TPH CWG (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	W35-1	W35-2	W35-3	W35-4	W35-5	W35-6
			Depth (m)	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	16/02/2021	16/02/2021	16/02/2021	16/02/2021	16/02/2021	16/02/2021
			Sample Time	.	.	.	.	.	.
			Date Received	18/02/2021	18/02/2021	18/02/2021	18/02/2021	18/02/2021	18/02/2021
			SDG Ref	210218-32	210218-32	210218-32	210218-32	210218-32	210218-32
			Lab Sample No.(s)	23747902	23747909	23747914	23747921	23747924	23747930
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		30.1 4	80.4	73.5	35.3	97.6	76.9
Aliphatics >C5-C6	<10 µg/kg	TM089		15 4	<10	<10	13	<10	<10
Aliphatics >C6-C8	<10 µg/kg	TM089		77.1 4	<10	<10	37.8	<10	<10
Aliphatics >C8-C10	<10 µg/kg	TM089		87.4 4	<10	<10	53.1	<10	<10
Aliphatics >C10-C12	<1000 µg/kg	TM414		2390	<1000	<1000	<1000	<1000	<1000
Aliphatics >C12-C16	<1000 µg/kg	TM414		11400	2030	<1000	9280	1920	<1000
Aliphatics >C16-C21	<1000 µg/kg	TM414		27500	10200	4050	22400	8090	<1000
Aliphatics >C21-C35	<1000 µg/kg	TM414		72900	60700	14300	70600	51300	6090
Aliphatics >C35-C44	<1000 µg/kg	TM414		28300	21700	<1000	15700	16600	<1000
Total Aliphatics >C10-C44	<5000 µg/kg	TM414		142000	94700	19100	119000	78000	7250
Total Aliphatics & Aromatics >C10-C44	<10000 µg/kg	TM414		233000	157000	90700	240000	139000	57900
Aromatics >EC5-EC7	<10 µg/kg	TM089		24.2 4	<10	<10	28.3	<10	<10
Aromatics >EC7-EC8	<10 µg/kg	TM089		26.5 4	<10	<10	28.3	<10	<10
Aromatics >EC8-EC10	<10 µg/kg	TM089		58.7 4	<10	<10	35.4	<10	<10
Aromatics > EC10-EC12	<1000 µg/kg	TM414		1870	<1000	<1000	1360	<1000	<1000
Aromatics > EC12-EC16	<1000 µg/kg	TM414		8670	<1000	<1000	4890	<1000	<1000
Aromatics > EC16-EC21	<1000 µg/kg	TM414		22600	7560	2710	29000	8470	1690
Aromatics > EC21-EC35	<1000 µg/kg	TM414		53600	48000	46700	78200	46900	32700
Aromatics >EC35-EC44	<1000 µg/kg	TM414		3360	5950	22000	7870	5160	16200
Aromatics > EC40-EC44	<1000 µg/kg	TM414		<1000	<1000	1740	1190	<1000	4860
Total Aromatics > EC10-EC44	<5000 µg/kg	TM414		90100	62000	71600	121000	61300	50700
Total Aliphatics & Aromatics >C5-C44	<10000 µg/kg	TM414		233000	157000	90700	240000	139000	57900
Total Aliphatics >C5-C10	<50 µg/kg	TM089		179 4	<50	<50	104	<50	<50
Total Aromatics >EC5-EC10	<50 µg/kg	TM089		109 4	<50	<50	92	<50	<50
GRO >C5-C10	<20 µg/kg	TM089		289 4	<20	<20	196	<20	<20

CERTIFICATE OF ANALYSIS

SDG:	210218-32	**Client Reference:**	P18-669	**Report Number:**	589805
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	589801

TPH CWG (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	W129-1	W129-2	W131-1	W131-2	W131-3	W131-4
			Depth (m)	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	17/02/2021	17/02/2021	17/02/2021	17/02/2021	17/02/2021	17/02/2021
			Sample Time	.	.	.	.	.	.
			Date Received	18/02/2021	18/02/2021	18/02/2021	18/02/2021	18/02/2021	18/02/2021
			SDG Ref	210218-32	210218-32	210218-32	210218-32	210218-32	210218-32
			Lab Sample No.(s)	23748130	23748135	23747982	23747988	23748000	23748009
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		37.3 4	61.2 4	99.6	87.4	98.4	84.6
Aliphatics >C5-C6	<10 µg/kg	TM089		<10 4	<10 4	<10	<10	<10	<10
Aliphatics >C6-C8	<10 µg/kg	TM089		<10 4	<10 4	<10	<10	<10	<10
Aliphatics >C8-C10	<10 µg/kg	TM089		<10 4	<10 4	<10	<10	<10	<10
Aliphatics >C10-C12	<1000 µg/kg	TM414		<1000	<1000	<1000	<1000	<1000	<1000
Aliphatics >C12-C16	<1000 µg/kg	TM414		<1000	1120	<1000	<1000	<1000	<1000
Aliphatics >C16-C21	<1000 µg/kg	TM414		1070	2080	<1000	5430	<1000	6960
Aliphatics >C21-C35	<1000 µg/kg	TM414		6940	15400	12700	40400	10700	42600
Aliphatics >C35-C44	<1000 µg/kg	TM414		<1000	2220	3120	3960	2720	9790
Total Aliphatics >C10-C44	<5000 µg/kg	TM414		8870	21400	16600	50000	14000	60400
Total Aliphatics & Aromatics >C10-C44	<10000 µg/kg	TM414		32100	54500	34700	88700	41000	96100
Aromatics >EC5-EC7	<10 µg/kg	TM089		<10 4	<10 4	<10	<10	<10	<10
Aromatics >EC7-EC8	<10 µg/kg	TM089		<10 4	<10 4	<10	<10	<10	<10
Aromatics >EC8-EC10	<10 µg/kg	TM089		<10 4	<10 4	<10	<10	<10	<10
Aromatics > EC10-EC12	<1000 µg/kg	TM414		<1000	<1000	<1000	<1000	<1000	<1000
Aromatics > EC12-EC16	<1000 µg/kg	TM414		<1000	<1000	<1000	1280	3480	<1000
Aromatics > EC16-EC21	<1000 µg/kg	TM414		4390	5450	1250	3390	4600	2110
Aromatics > EC21-EC35	<1000 µg/kg	TM414		17300	23900	13500	28700	15100	28300
Aromatics >EC35-EC44	<1000 µg/kg	TM414		<1000	2570	3380	5290	3850	4800
Aromatics > EC40-EC44	<1000 µg/kg	TM414		<1000	<1000	<1000	1170	<1000	1880
Total Aromatics > EC10-EC44	<5000 µg/kg	TM414		23300	33100	18100	38600	27000	35800
Total Aliphatics & Aromatics >C5-C44	<10000 µg/kg	TM414		32100	54500	34700	88700	41000	96100
Total Aliphatics >C5-C10	<50 µg/kg	TM089		<50 4	<50 4	<50	<50	<50	<50
Total Aromatics >EC5-EC10	<50 µg/kg	TM089		<50 4	<50 4	<50	<50	<50	<50
GRO >C5-C10	<20 µg/kg	TM089		<20 4	<20 4	<20	<20	<20	<20

CERTIFICATE OF ANALYSIS

SDG:	210218-32	**Client Reference:**	P18-669	**Report Number:**	589805
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	589801

TPH CWG (S)

Results Legend

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aq	Aqueous / settled sample.
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*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	W156-1	W156-2	W156-3	W156-4	W156-5	W156-6
			Depth (m)	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	17/02/2021	17/02/2021	17/02/2021	17/02/2021	17/02/2021	17/02/2021
			Sample Time	.	.	.	.	.	.
			Date Received	18/02/2021	18/02/2021	18/02/2021	18/02/2021	18/02/2021	18/02/2021
			SDG Ref	210218-32	210218-32	210218-32	210218-32	210218-32	210218-32
			Lab Sample No.(s)	23748017	23748032	23748046	23748052	23748060	23748067
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		99.9	115	73.8	79.5	84.7	96.7
Aliphatics >C5-C6	<10 µg/kg	TM089		<10	<10	<10	<10	12.5	<10
Aliphatics >C6-C8	<10 µg/kg	TM089		<10	17.6	<10	<10	51.3	<10
Aliphatics >C8-C10	<10 µg/kg	TM089		<10	28.1	<10	<10	73	<10
Aliphatics >C10-C12	<1000 µg/kg	TM414		<1000	<1000	<1000	<1000	<1000	<1000
Aliphatics >C12-C16	<1000 µg/kg	TM414		1190	<1000	1780	13200	13800	1710
Aliphatics >C16-C21	<1000 µg/kg	TM414		11900	16100	14000	119000	369000	12100
Aliphatics >C21-C35	<1000 µg/kg	TM414		61300	46900	57700	142000	147000	95700
Aliphatics >C35-C44	<1000 µg/kg	TM414		27600	11400	21800	40800	15300	54400
Total Aliphatics >C10-C44	<5000 µg/kg	TM414		102000	75100	95200	314000	546000	164000
Total Aliphatics & Aromatics >C10-C44	<10000 µg/kg	TM414		142000	117000	136000	379000	1680000	312000
Aromatics >EC5-EC7	<10 µg/kg	TM089		<10	<10	<10	<10	<10	<10
Aromatics >EC7-EC8	<10 µg/kg	TM089		<10	<10	<10	<10	<10	<10
Aromatics >EC8-EC10	<10 µg/kg	TM089		<10	18.7	<10	<10	49	<10
Aromatics > EC10-EC12	<1000 µg/kg	TM414		<1000	5600	2950	4340	14800	<1000
Aromatics > EC12-EC16	<1000 µg/kg	TM414		<1000	<1000	<1000	1510	55600	1000
Aromatics > EC16-EC21	<1000 µg/kg	TM414		5390	3270	6880	13000	436000	24900
Aromatics > EC21-EC35	<1000 µg/kg	TM414		30400	27000	29000	42200	557000	105000
Aromatics >EC35-EC44	<1000 µg/kg	TM414		3510	6220	1980	3490	71400	16200
Aromatics > EC40-EC44	<1000 µg/kg	TM414		<1000	1200	<1000	<1000	14700	3740
Total Aromatics > EC10-EC44	<5000 µg/kg	TM414		39800	42100	41100	64500	1140000	148000
Total Aliphatics & Aromatics >C5-C44	<10000 µg/kg	TM414		142000	117000	136000	379000	1680000	312000
Total Aliphatics >C5-C10	<50 µg/kg	TM089		<50	<50	<50	<50	137	<50
Total Aromatics >EC5-EC10	<50 µg/kg	TM089		<50	<50	<50	<50	<50	<50
GRO >C5-C10	<20 µg/kg	TM089		<20	<20	<20	<20	137	<20

Validated

CERTIFICATE OF ANALYSIS

SDG:	210218-32	**Client Reference:**	P18-669	**Report Number:**	589805
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	589801

TPH CWG (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	W156-7	W156-8	W156-9	W206-1	W206-2	W206-3
			Depth (m)	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	17/02/2021	17/02/2021	17/02/2021	17/02/2021	17/02/2021	17/02/2021
			Sample Time	.	.	.	.	.	.
			Date Received	18/02/2021	18/02/2021	18/02/2021	18/02/2021	18/02/2021	18/02/2021
			SDG Ref	210218-32	210218-32	210218-32	210218-32	210218-32	210218-32
			Lab Sample No.(s)	23748072	23748077	23748084	23748094	23748105	23748115
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		86.6	102	83.8	58 4	19.1 4	100
Aliphatics >C5-C6	<10 µg/kg	TM089		<10	<10	<10	<10 4	15.2 4	<10
Aliphatics >C6-C8	<10 µg/kg	TM089		<10	13.4	<10	<10 4	62 4	16.8
Aliphatics >C8-C10	<10 µg/kg	TM089		<10	30.5	<10	<10 4	39.8 4	20.2
Aliphatics >C10-C12	<1000 µg/kg	TM414		<1000	<1000	<1000	<1000	1130	<1000
Aliphatics >C12-C16	<1000 µg/kg	TM414		<1000	5880	5580	<1000	4200	<1000
Aliphatics >C16-C21	<1000 µg/kg	TM414		28800	42800	91800	<1000	13800	3880
Aliphatics >C21-C35	<1000 µg/kg	TM414		61000	99800	93700	10700	22700	24200
Aliphatics >C35-C44	<1000 µg/kg	TM414		17100	38100	31300	1560	3750	4960
Total Aliphatics >C10-C44	<5000 µg/kg	TM414		108000	187000	222000	13300	45600	33500
Total Aliphatics & Aromatics >C10-C44	<10000 µg/kg	TM414		136000	254000	298000	86400	91900	69900
Aromatics >EC5-EC7	<10 µg/kg	TM089		<10	<10	<10	<10 4	<10 4	<10
Aromatics >EC7-EC8	<10 µg/kg	TM089		<10	<10	<10	<10 4	<10 4	<10
Aromatics >EC8-EC10	<10 µg/kg	TM089		<10	20.7	<10	<10 4	26.9 4	13.4
Aromatics > EC10-EC12	<1000 µg/kg	TM414		4610	7920	2820	<1000	<1000	<1000
Aromatics > EC12-EC16	<1000 µg/kg	TM414		<1000	1550	1030	<1000	5150	<1000
Aromatics > EC16-EC21	<1000 µg/kg	TM414		2960	10900	17500	18500	11600	6500
Aromatics > EC21-EC35	<1000 µg/kg	TM414		19400	44300	48300	48300	27100	27600
Aromatics >EC35-EC44	<1000 µg/kg	TM414		1110	2270	6230	5000	1820	1650
Aromatics > EC40-EC44	<1000 µg/kg	TM414		<1000	<1000	<1000	<1000	<1000	<1000
Total Aromatics > EC10-EC44	<5000 µg/kg	TM414		28100	67000	75900	73100	46300	36400
Total Aliphatics & Aromatics >C5-C44	<10000 µg/kg	TM414		136000	254000	298000	86400	92000	70000
Total Aliphatics >C5-C10	<50 µg/kg	TM089		<50	<50	<50	<50 4	117 4	<50
Total Aromatics >EC5-EC10	<50 µg/kg	TM089		<50	<50	<50	<50 4	<50 4	<50
GRO >C5-C10	<20 µg/kg	TM089		<20	<20	<20	<20 4	117 4	<20

Validated

CERTIFICATE OF ANALYSIS

SDG:	210218-32	**Client Reference:**	P18-669	**Report Number:**	589805
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	589801

TPH CWG (S)

Results Legend

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**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	W206-4	W208-1	W208-2	W209-1	W209-2	W209-3
			Depth (m)	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	17/02/2021	17/02/2021	17/02/2021	17/02/2021	17/02/2021	17/02/2021
			Sample Time	.	.	.	.	.	.
			Date Received	18/02/2021	18/02/2021	18/02/2021	18/02/2021	18/02/2021	18/02/2021
			SDG Ref	210218-32	210218-32	210218-32	210218-32	210218-32	210218-32
			Lab Sample No.(s)	23748120	23748200	23748230	23747937	23747950	23747954
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		14.7 4	104	118	99.3	94.3	88.5
Aliphatics >C5-C6	<10 µg/kg	TM089		<10 4	<10	<10	<10	39.8	20.9
Aliphatics >C6-C8	<10 µg/kg	TM089		41.5 4	27.6	37.2	<10	101	82.4
Aliphatics >C8-C10	<10 µg/kg	TM089		26.8 4	28.8	57.6	14.7	453	128
Aliphatics >C10-C12	<1000 µg/kg	TM414		2010	<1000	<1000	<1000	16900	7100
Aliphatics >C12-C16	<1000 µg/kg	TM414		6100	<1000	<1000	2910	50700	25100
Aliphatics >C16-C21	<1000 µg/kg	TM414		16400	<1000	<1000	29800	56900	60800
Aliphatics >C21-C35	<1000 µg/kg	TM414		29900	9550	5260	15100	71600	37600
Aliphatics >C35-C44	<1000 µg/kg	TM414		6330	2060	1560	4640	9010	5780
Total Aliphatics >C10-C44	<5000 µg/kg	TM414		60800	12700	7220	52400	205000	136000
Total Aliphatics & Aromatics >C10-C44	<10000 µg/kg	TM414		122000	22300	16100	1520000	372000	232000
Aromatics >EC5-EC7	<10 µg/kg	TM089		<10 4	<10	<10	<10	23.4	<10
Aromatics >EC7-EC8	<10 µg/kg	TM089		<10 4	<10	<10	<10	14	<10
Aromatics >EC8-EC10	<10 µg/kg	TM089		17.1 4	19.6	38.4	10.2	302	84.7
Aromatics > EC10-EC12	<1000 µg/kg	TM414		1250	<1000	<1000	9410	10100	4400
Aromatics > EC12-EC16	<1000 µg/kg	TM414		8900	<1000	<1000	160000	36900	11600
Aromatics > EC16-EC21	<1000 µg/kg	TM414		15500	1400	1440	526000	27800	15100
Aromatics > EC21-EC35	<1000 µg/kg	TM414		34300	7170	6470	664000	75900	55900
Aromatics >EC35-EC44	<1000 µg/kg	TM414		1370	<1000	<1000	113000	16200	8930
Aromatics > EC40-EC44	<1000 µg/kg	TM414		<1000	<1000	<1000	15900	4530	2210
Total Aromatics > EC10-EC44	<5000 µg/kg	TM414		61400	9630	8910	1470000	167000	96000
Total Aliphatics & Aromatics >C5-C44	<10000 µg/kg	TM414		122000	22400	16300	1520000	373000	233000
Total Aliphatics >C5-C10	<50 µg/kg	TM089		68.3 4	56.4	94.8	<50	593	231
Total Aromatics >EC5-EC10	<50 µg/kg	TM089		<50 4	<50	<50	<50	339	84.7
GRO >C5-C10	<20 µg/kg	TM089		68.3 4	56.4	94.8	<20	932	316

Validated

CERTIFICATE OF ANALYSIS

SDG:	210218-32	**Client Reference:**	P18-669	**Report Number:**	589805
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	589801

TPH CWG (S)

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(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	W209-4	W209-5	W209-6	W156-10	W209B-1	W209B-2
			Depth (m)	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	17/02/2021	17/02/2021	17/02/2021	17/02/2021	17/02/2021	17/02/2021
			Sample Time	.	.	.	.	.	.
			Date Received	18/02/2021	18/02/2021	18/02/2021	18/02/2021	18/02/2021	18/02/2021
			SDG Ref	210218-32	210218-32	210218-32	210218-32	210218-32	210218-32
			Lab Sample No.(s)	23747961	23747966	23747973	23748089	23748142	23748146
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		78.5	98.2	79.4	78.1	48.1 4	35 4
Aliphatics >C5-C6	<10 µg/kg	TM089		12.8	22.5	19.2	23.5	<10 4	<10 4
Aliphatics >C6-C8	<10 µg/kg	TM089		24.4	69.7	28.3	45.9	<10 4	<10 4
Aliphatics >C8-C10	<10 µg/kg	TM089		30.2	279	87	73.9	<10 4	<10 4
Aliphatics >C10-C12	<1000 µg/kg	TM414		<1000	28300	2910	<1000	<1000	<1000
Aliphatics >C12-C16	<1000 µg/kg	TM414		13100	82600	22400	32600	1490	2090
Aliphatics >C16-C21	<1000 µg/kg	TM414		73900	84100	67000	447000	10600	12900
Aliphatics >C21-C35	<1000 µg/kg	TM414		31800	81900	44900	220000	27200	26000
Aliphatics >C35-C44	<1000 µg/kg	TM414		4710	9070	7750	30400	7180	3980
Total Aliphatics >C10-C44	<5000 µg/kg	TM414		124000	286000	145000	730000	46400	45000
Total Aliphatics & Aromatics >C10-C44	<10000 µg/kg	TM414		1150000	462000	281000	960000	160000	178000
Aromatics >EC5-EC7	<10 µg/kg	TM089		<10	12.9	22.6	11.2	<10 4	<10 4
Aromatics >EC7-EC8	<10 µg/kg	TM089		<10	<10	11.3	15.7	<10 4	<10 4
Aromatics >EC8-EC10	<10 µg/kg	TM089		20.9	185	58.8	49.3	<10 4	<10 4
Aromatics > EC10-EC12	<1000 µg/kg	TM414		15300	14000	4910	5850	<1000	<1000
Aromatics > EC12-EC16	<1000 µg/kg	TM414		84700	50000	8980	10700	3880	4650
Aromatics > EC16-EC21	<1000 µg/kg	TM414		345000	35200	31300	71400	21600	26900
Aromatics > EC21-EC35	<1000 µg/kg	TM414		499000	57100	79700	116000	79700	91500
Aromatics >EC35-EC44	<1000 µg/kg	TM414		79300	20200	11500	25900	7370	9770
Aromatics > EC40-EC44	<1000 µg/kg	TM414		13300	6830	2810	8370	<1000	1220
Total Aromatics > EC10-EC44	<5000 µg/kg	TM414		1020000	176000	136000	230000	113000	133000
Total Aliphatics & Aromatics >C5-C44	<10000 µg/kg	TM414		1150000	463000	282000	961000	160000	178000
Total Aliphatics >C5-C10	<50 µg/kg	TM089		67.3	371	134	143	<50 4	<50 4
Total Aromatics >EC5-EC10	<50 µg/kg	TM089		<50	198	92.7	76.2	<50 4	<50 4
GRO >C5-C10	<20 µg/kg	TM089		67.3	569	227	220	<20 4	<20 4

CERTIFICATE OF ANALYSIS

SDG:	210218-32	**Client Reference:**	P18-669	**Report Number:**	589805
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	589801

TPH CWG (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	W209B-3	W209B-4	W209C-1	W209C-2	W209C-3	W209C-4
			Depth (m)	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	17/02/2021	17/02/2021	17/02/2021	17/02/2021	17/02/2021	17/02/2021
			Sample Time	.	.	.	.	.	.
			Date Received	18/02/2021	18/02/2021	18/02/2021	18/02/2021	18/02/2021	18/02/2021
			SDG Ref	210218-32	210218-32	210218-32	210218-32	210218-32	210218-32
			Lab Sample No.(s)	23748156	23748161	23748167	23748178	23748183	23748191
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		48.7 4	16.2 4	82.8	91.4	73.5	76
Aliphatics >C5-C6	<10 µg/kg	TM089		<10 4	33 4	<10	<10	11.4	<10
Aliphatics >C6-C8	<10 µg/kg	TM089		21.1 4	155 4	13.3	17	18.2	12.3
Aliphatics >C8-C10	<10 µg/kg	TM089		26.6 4	117 4	34.4	35	41	22.4
Aliphatics >C10-C12	<1000 µg/kg	TM414		<1000	<1000	<1000	<1000	<1000	<1000
Aliphatics >C12-C16	<1000 µg/kg	TM414		1930	<1000	5590	2360	3550	1460
Aliphatics >C16-C21	<1000 µg/kg	TM414		12400	11100	9960	4870	11200	3720
Aliphatics >C21-C35	<1000 µg/kg	TM414		38000	25700	95300	27700	35400	18000
Aliphatics >C35-C44	<1000 µg/kg	TM414		10400	5070	97000	13900	30300	6520
Total Aliphatics >C10-C44	<5000 µg/kg	TM414		62800	42800	208000	48800	80600	29900
Total Aliphatics & Aromatics >C10-C44	<10000 µg/kg	TM414		356000	114000	340000	100000	290000	76600
Aromatics >EC5-EC7	<10 µg/kg	TM089		<10 4	<10 4	<10	<10	<10	<10
Aromatics >EC7-EC8	<10 µg/kg	TM089		<10 4	14.2 4	<10	<10	<10	<10
Aromatics >EC8-EC10	<10 µg/kg	TM089		17.8 4	77.9 4	22.2	23.7	27.4	15.7
Aromatics > EC10-EC12	<1000 µg/kg	TM414		2350	<1000	1020	<1000	4930	<1000
Aromatics > EC12-EC16	<1000 µg/kg	TM414		9060	2780	13000	<1000	9740	<1000
Aromatics > EC16-EC21	<1000 µg/kg	TM414		80800	14000	27200	5480	63700	5040
Aromatics > EC21-EC35	<1000 µg/kg	TM414		184000	48800	86800	42100	120000	34000
Aromatics >EC35-EC44	<1000 µg/kg	TM414		17400	4700	3700	3260	10800	7380
Aromatics > EC40-EC44	<1000 µg/kg	TM414		2400	1570	<1000	1240	2840	1300
Total Aromatics > EC10-EC44	<5000 µg/kg	TM414		294000	70800	132000	51400	210000	46800
Total Aliphatics & Aromatics >C5-C44	<10000 µg/kg	TM414		356000	114000	340000	100000	290000	76700
Total Aliphatics >C5-C10	<50 µg/kg	TM089		<50 4	304 4	<50	52	70.7	<50
Total Aromatics >EC5-EC10	<50 µg/kg	TM089		<50 4	92 4	<50	<50	<50	<50
GRO >C5-C10	<20 µg/kg	TM089		<20 4	396 4	<20	52	70.7	<20

CERTIFICATE OF ANALYSIS

SDG:	210218-32	**Client Reference:**	P18-669	**Report Number:**	589805
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	589801

VOC MS (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	SPDL-1	SPDL-2	SPDL-3	SPDL-4	SPJJ-1	SPJJ-2
			Depth (m)	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	16/02/2021	16/02/2021	16/02/2021	16/02/2021	16/02/2021	16/02/2021
			Sample Time	.	.	.	.	.	.
			Date Received	18/02/2021	18/02/2021	18/02/2021	18/02/2021	18/02/2021	18/02/2021
			SDG Ref	210218-32	210218-32	210218-32	210218-32	210218-32	210218-32
			Lab Sample No.(s)	23748251	23747881	23747887	23747896	23748172	23748234
			AGS Reference						
Dibromofluoromethane**	%	TM116		106	101	110	102	109	109
Toluene-d8**	%	TM116		92.8	89.6	93.7	91.9	94.6	95.3
4-Bromofluorobenzene**	%	TM116		96.6	84.6	101	90.9	101	103
Methyl Tertiary Butyl Ether	<10 µg/kg	TM116		<200 M	<200 M	<200 M	<200 M	<200 M	<200 M
Benzene	<9 µg/kg	TM116		<180 M	<180 M	<180 M	<180 M	<180 M	<180 M
Toluene	<7 µg/kg	TM116		<140 M	<140 M	<140 M	<140 M	<140 M	<140 M
Ethylbenzene	<4 µg/kg	TM116		<80 M	<80 M	<80 M	<80 M	<80 M	<80 M
p/m-Xylene	<10 µg/kg	TM116		<200 #	<200 #	<200 #	<200 #	<200 #	<200 #
o-Xylene	<10 µg/kg	TM116		<200 M	<200 M	<200 M	<200 M	<200 M	<200 M
Naphthalene	<13 µg/kg	TM116		478 M	561 M	545 M	397 M	<260 M	<260 M
Sum of Detected Xylenes	<0.02 mg/kg	TM116		<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Sum of BTEX	<40 µg/kg	TM116		<800	<800	<800	<800	<800	<800

CERTIFICATE OF ANALYSIS

SDG:	210218-32	**Client Reference:**	P18-669	**Report Number:**	589805
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	589801

VOC MS (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	SPJJ-3	SPJJ-4	SPLB-1	SPLB-2	SPLB-3	SPLB-4
			Depth (m)	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	16/02/2021	16/02/2021	16/02/2021	16/02/2021	16/02/2021	16/02/2021
			Sample Time	.	.	.	.	.	.
			Date Received	18/02/2021	18/02/2021	18/02/2021	18/02/2021	18/02/2021	18/02/2021
			SDG Ref	210218-32	210218-32	210218-32	210218-32	210218-32	210218-32
			Lab Sample No.(s)	23748241	23748245	23747877	23747944	23748025	23748100
			AGS Reference						
Dibromofluoromethane**	%	TM116		111	108	106	109	108	105
Toluene-d8**	%	TM116		95.6	94	95.4	95.5	92.1	95.9
4-Bromofluorobenzene**	%	TM116		102	99.4	101	106	97.2	94.7
Methyl Tertiary Butyl Ether	<10 µg/kg	TM116		<200 M	<200 M	<200 M	<200 M	<200 M	<200 M
Benzene	<9 µg/kg	TM116		<180 M	<180 M	<180 M	<180 M	<180 M	<180 M
Toluene	<7 µg/kg	TM116		<140 M	<140 M	<140 M	<140 M	<140 M	<140 M
Ethylbenzene	<4 µg/kg	TM116		<80 M	<80 M	<80 M	<80 M	<80 M	<80 M
p/m-Xylene	<10 µg/kg	TM116		<200 #	<200 #	<200 #	<200 #	<200 #	<200 #
o-Xylene	<10 µg/kg	TM116		<200 M	<200 M	<200 M	<200 M	<200 M	<200 M
Naphthalene	<13 µg/kg	TM116		<260 M	<260 M	<260 M	<260 M	<260 M	<260 M
Sum of Detected Xylenes	<0.02 mg/kg	TM116		<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Sum of BTEX	<40 µg/kg	TM116		<800	<800	<800	<800	<800	<800

CERTIFICATE OF ANALYSIS

SDG:	210218-32	**Client Reference:**	P18-669	**Report Number:**	589805
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	589801

VOC MS (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	W35-1	W35-2	W35-3	W35-4	W35-5	W35-6
			Depth (m)	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	16/02/2021	16/02/2021	16/02/2021	16/02/2021	16/02/2021	16/02/2021
			Sample Time	.	.	.	.	.	.
			Date Received	18/02/2021	18/02/2021	18/02/2021	18/02/2021	18/02/2021	18/02/2021
			SDG Ref	210218-32	210218-32	210218-32	210218-32	210218-32	210218-32
			Lab Sample No.(s)	23747902	23747909	23747914	23747921	23747924	23747930
			AGS Reference						
Dibromofluoromethane**	%	TM116		97.3	105	109	93.5	110	110
Toluene-d8**	%	TM116		93.2	98.6	99.1	96.1	95.7	96.5
4-Bromofluorobenzene**	%	TM116		77.3	95.7	90.6	79.7	103	93
Methyl Tertiary Butyl Ether	<10 µg/kg	TM116		<200 M	<200 M	<200 M	<200 M	<200 M	<200 M
Benzene	<9 µg/kg	TM116		<180 M	<180 M	<180 M	<180 M	<180 M	<180 M
Toluene	<7 µg/kg	TM116		<140 M	<140 M	<140 M	179 M	<140 M	<140 M
Ethylbenzene	<4 µg/kg	TM116		<80 M	<80 M	<80 M	<80 M	<80 M	<80 M
p/m-Xylene	<10 µg/kg	TM116		<200 #	<200 #	<200 #	<200 #	<200 #	<200 #
o-Xylene	<10 µg/kg	TM116		<200 M	<200 M	<200 M	<200 M	<200 M	<200 M
Naphthalene	<13 µg/kg	TM116		<260 M	<260 M	<260 M	406 M	<260 M	<260 M
Sum of Detected Xylenes	<0.02 mg/kg	TM116		<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Sum of BTEX	<40 µg/kg	TM116		<800	<800	<800	<800	<800	<800

CERTIFICATE OF ANALYSIS

SDG:	210218-32	**Client Reference:**	P18-669	**Report Number:**	589805
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	589801

VOC MS (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	W129-1	W129-2	W131-1	W131-2	W131-3	W131-4
			Depth (m)	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	17/02/2021	17/02/2021	17/02/2021	17/02/2021	17/02/2021	17/02/2021
			Sample Time	.	.	.	.	.	.
			Date Received	18/02/2021	18/02/2021	18/02/2021	18/02/2021	18/02/2021	18/02/2021
			SDG Ref	210218-32	210218-32	210218-32	210218-32	210218-32	210218-32
			Lab Sample No.(s)	23748130	23748135	23747982	23747988	23748000	23748009
			AGS Reference						
Dibromofluoromethane**	%	TM116		104	104	111	107	105	107
Toluene-d8**	%	TM116		93.2	92.3	95.3	99.6	98.4	99.9
4-Bromofluorobenzene**	%	TM116		92.9	88.6	103	95.1	96.7	97.3
Methyl Tertiary Butyl Ether	<10 µg/kg	TM116		<200 M	<200 M	<200 M	<200 M	<200 M	<200 M
Benzene	<9 µg/kg	TM116		<180 M	<180 M	<180 M	<180 M	<180 M	<180 M
Toluene	<7 µg/kg	TM116		<140 M	<140 M	<140 M	<140 M	<140 M	<140 M
Ethylbenzene	<4 µg/kg	TM116		<80 M	<80 M	<80 M	<80 M	<80 M	<80 M
p/m-Xylene	<10 µg/kg	TM116		<200 #	<200 #	<200 #	<200 #	<200 #	<200 #
o-Xylene	<10 µg/kg	TM116		<200 M	<200 M	<200 M	<200 M	<200 M	<200 M
Naphthalene	<13 µg/kg	TM116		<260 M	<260 M	<260 M	<260 M	<260 M	<260 M
Sum of Detected Xylenes	<0.02 mg/kg	TM116		<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Sum of BTEX	<40 µg/kg	TM116		<800	<800	<800	<800	<800	<800

Validated

CERTIFICATE OF ANALYSIS

SDG:	210218-32	**Client Reference:**	P18-669	**Report Number:**	589805
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	589801

VOC MS (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	W156-1	W156-2	W156-3	W156-4	W156-5	W156-6
			Depth (m)	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	17/02/2021	17/02/2021	17/02/2021	17/02/2021	17/02/2021	17/02/2021
			Sample Time	.	.	.	.	.	.
			Date Received	18/02/2021	18/02/2021	18/02/2021	18/02/2021	18/02/2021	18/02/2021
			SDG Ref	210218-32	210218-32	210218-32	210218-32	210218-32	210218-32
			Lab Sample No.(s)	23748017	23748032	23748046	23748052	23748060	23748067
			AGS Reference						
Dibromofluoromethane**	%	TM116		106	108	106	106	98.3	106
Toluene-d8**	%	TM116		93.8	94.1	101	99.6	93.9	94.8
4-Bromofluorobenzene**	%	TM116		105	102	94.9	93.1	82.2	106
Methyl Tertiary Butyl Ether	<10 µg/kg	TM116		<200 M	<200 M	<200 M	<200 M	<200 M	<200 M
Benzene	<9 µg/kg	TM116		<180 M	<180 M	<180 M	<180 M	<180 M	<180 M
Toluene	<7 µg/kg	TM116		<140 M	<140 M	<140 M	<140 M	<140 M	<140 M
Ethylbenzene	<4 µg/kg	TM116		<80 M	<80 M	<80 M	<80 M	<80 M	<80 M
p/m-Xylene	<10 µg/kg	TM116		<200 #	<200 #	<200 #	<200 #	<200 #	<200 #
o-Xylene	<10 µg/kg	TM116		<200 M	<200 M	<200 M	<200 M	<200 M	<200 M
Naphthalene	<13 µg/kg	TM116		<260 M	489 M	1890 M	491 M	1760 M	<260 M
Sum of Detected Xylenes	<0.02 mg/kg	TM116		<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Sum of BTEX	<40 µg/kg	TM116		<800	<800	<800	<800	<800	<800

CERTIFICATE OF ANALYSIS

SDG:	210218-32	**Client Reference:**	P18-669	**Report Number:**	589805
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	589801

VOC MS (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	W156-7	W156-8	W156-9	W206-1	W206-2	W206-3
			Depth (m)	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	17/02/2021	17/02/2021	17/02/2021	17/02/2021	17/02/2021	17/02/2021
			Sample Time	.	.	.	.	.	.
			Date Received	18/02/2021	18/02/2021	18/02/2021	18/02/2021	18/02/2021	18/02/2021
			SDG Ref	210218-32	210218-32	210218-32	210218-32	210218-32	210218-32
			Lab Sample No.(s)	23748072	23748077	23748084	23748094	23748105	23748115
			AGS Reference						
Dibromofluoromethane**	%	TM116		108	107	103	116	93.1	106
Toluene-d8**	%	TM116		98.3	97.6	97.9	94.7	86.6	95.5
4-Bromofluorobenzene**	%	TM116		92.1	97.3	93.9	101	74.1	103
Methyl Tertiary Butyl Ether	<10 µg/kg	TM116		<200 M	<200 M	<200 M	<200 M	<200 M	<200 M
Benzene	<9 µg/kg	TM116		<180 M	<180 M	<180 M	<180 M	<180 M	<180 M
Toluene	<7 µg/kg	TM116		<140 M	<140 M	<140 M	<140 M	<140 M	<140 M
Ethylbenzene	<4 µg/kg	TM116		<80 M	<80 M	<80 M	<80 M	<80 M	<80 M
p/m-Xylene	<10 µg/kg	TM116		<200 #	<200 #	<200 #	<200 #	<200 #	<200 #
o-Xylene	<10 µg/kg	TM116		<200 M	<200 M	<200 M	<200 M	<200 M	<200 M
Naphthalene	<13 µg/kg	TM116		517 M	583 M	376 M	<260 M	<260 M	<260 M
Sum of Detected Xylenes	<0.02 mg/kg	TM116		<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Sum of BTEX	<40 µg/kg	TM116		<800	<800	<800	<800	<800	<800

CERTIFICATE OF ANALYSIS

SDG:	210218-32	**Client Reference:**	P18-669	**Report Number:**	589805
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	589801

VOC MS (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	W206-4	W208-1	W208-2	W209-1	W209-2	W209-3
			Depth (m)	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	17/02/2021	17/02/2021	17/02/2021	17/02/2021	17/02/2021	17/02/2021
			Sample Time	.	.	.	.	.	.
			Date Received	18/02/2021	18/02/2021	18/02/2021	18/02/2021	18/02/2021	18/02/2021
			SDG Ref	210218-32	210218-32	210218-32	210218-32	210218-32	210218-32
			Lab Sample No.(s)	23748120	23748200	23748230	23747937	23747950	23747954
			AGS Reference						
Dibromofluoromethane**	%	TM116		96.4	104	107	110	106	106
Toluene-d8**	%	TM116		83.3	92.6	97.5	95.7	93.7	92.6
4-Bromofluorobenzene**	%	TM116		70.9	91.2	92.5	105	96.9	94.6
Methyl Tertiary Butyl Ether	<10 µg/kg	TM116		<200 M	<200 M	<200 M	<200 M	<200 M	<200 M
Benzene	<9 µg/kg	TM116		<180 M	<180 M	<180 M	<180 M	<180 M	<180 M
Toluene	<7 µg/kg	TM116		<140 M	<140 M	<140 M	<140 M	<140 M	<140 M
Ethylbenzene	<4 µg/kg	TM116		<80 M	<80 M	<80 M	<80 M	<80 M	<80 M
p/m-Xylene	<10 µg/kg	TM116		<200 #	<200 #	<200 #	<200 #	<200 #	<200 #
o-Xylene	<10 µg/kg	TM116		<200 M	<200 M	<200 M	<200 M	<200 M	<200 M
Naphthalene	<13 µg/kg	TM116		350 M	<260 M	<260 M	<260 M	619 M	569 M
Sum of Detected Xylenes	<0.02 mg/kg	TM116		<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Sum of BTEX	<40 µg/kg	TM116		<800	<800	<800	<800	<800	<800

CERTIFICATE OF ANALYSIS

SDG:	210218-32	**Client Reference:**	P18-669	**Report Number:**	589805
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	589801

VOC MS (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	W209-4	W209-5	W209-6	W156-10	W209B-1	W209B-2
			Depth (m)	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	17/02/2021	17/02/2021	17/02/2021	17/02/2021	17/02/2021	17/02/2021
			Sample Time	.	.	.	.	.	.
			Date Received	18/02/2021	18/02/2021	18/02/2021	18/02/2021	18/02/2021	18/02/2021
			SDG Ref	210218-32	210218-32	210218-32	210218-32	210218-32	210218-32
			Lab Sample No.(s)	23747961	23747966	23747973	23748089	23748142	23748146
			AGS Reference						
Dibromofluoromethane**	%	TM116		106	107	113	106	107	110
Toluene-d8**	%	TM116		99.5	94.4	94.4	100	92.4	91.4
4-Bromofluorobenzene**	%	TM116		97	93.6	95	91.7	87.6	86.9
Methyl Tertiary Butyl Ether	<10 µg/kg	TM116		<200 M	<200 M	<200 M	<200 M	<200 M	<200 M
Benzene	<9 µg/kg	TM116		<180 M	<180 M	<180 M	<180 M	<180 M	<180 M
Toluene	<7 µg/kg	TM116		<140 M	<140 M	<140 M	<140 M	<140 M	<140 M
Ethylbenzene	<4 µg/kg	TM116		<80 M	<80 M	<80 M	<80 M	<80 M	<80 M
p/m-Xylene	<10 µg/kg	TM116		<200 #	<200 #	<200 #	<200 #	<200 #	<200 #
o-Xylene	<10 µg/kg	TM116		<200 M	<200 M	<200 M	<200 M	<200 M	<200 M
Naphthalene	<13 µg/kg	TM116		581 M	386 M	381 M	43000 M	<260 M	<260 M
Sum of Detected Xylenes	<0.02 mg/kg	TM116		<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Sum of BTEX	<40 µg/kg	TM116		<800	<800	<800	<800	<800	<800

Validated

CERTIFICATE OF ANALYSIS

SDG:	210218-32	**Client Reference:**	P18-669	**Report Number:**	589805
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	589801

VOC MS (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	W209B-3	W209B-4	W209C-1	W209C-2	W209C-3	W209C-4
			Depth (m)	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	17/02/2021	17/02/2021	17/02/2021	17/02/2021	17/02/2021	17/02/2021
			Sample Time	.	.	.	.	.	.
			Date Received	18/02/2021	18/02/2021	18/02/2021	18/02/2021	18/02/2021	18/02/2021
			SDG Ref	210218-32	210218-32	210218-32	210218-32	210218-32	210218-32
			Lab Sample No.(s)	23748156	23748161	23748167	23748178	23748183	23748191
			AGS Reference						
Dibromofluoromethane**	%	TM116		106	104	108	106	108	110
Toluene-d8**	%	TM116		93.6	97.1	93.8	97.9	97.5	94.8
4-Bromofluorobenzene**	%	TM116		94.7	84	100	89.1	87.7	101
Methyl Tertiary Butyl Ether	<10 µg/kg	TM116		<200 M	<200 M	<200 #	<200 M	<200 #	<200 M
Benzene	<9 µg/kg	TM116		<180 M	<180 M	<180 #	<180 M	<180 #	<180 M
Toluene	<7 µg/kg	TM116		<140 M	<140 M	<140 #	<140 M	<140 #	<140 M
Ethylbenzene	<4 µg/kg	TM116		<80 M	<80 M	<80 #	<80 M	<80 #	<80 M
p/m-Xylene	<10 µg/kg	TM116		<200 #	<200 #	<200 #	<200 #	<200 #	<200 #
o-Xylene	<10 µg/kg	TM116		<200 M	<200 M	<200 #	<200 M	<200 #	<200 M
Naphthalene	<13 µg/kg	TM116		<260 M	<260 M	621 #	<260 M	1560 #	<260 M
Sum of Detected Xylenes	<0.02 mg/kg	TM116		<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Sum of BTEX	<40 µg/kg	TM116		<800	<800	<800	<800	<800	<800

CERTIFICATE OF ANALYSIS

SDG:	210218-32	**Client Reference:**	P18-669	**Report Number:**	589805
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	589801

Asbestos Identification - Solid Samples

Results Legend

#	ISO17025 accredited.
M	*m*CERTS accredited.
*	Subcontracted test.
(F)	Trigger breach confirmed
1-5&+$@	Sample deviation (see appendix)

Cust. Sample Ref. / Depth (m) / Sample Type / Date Sampled / Date Received / SDG / Original Sample / Method Number	Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthophyllite	Fibrous Tremolite	Non-Asbestos Fibre
SPDL-1 / 0.20 - 0.20 / SOLID / 16/02/2021 00:00:00 / 18/02/2021 05:00:00 / 210218-32 / 23748251 / TM048	25/02/2021	Paul Poynton	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
SPDL-3 / 0.20 - 0.20 / SOLID / 16/02/2021 00:00:00 / 18/02/2021 05:00:00 / 210218-32 / 23747887 / TM048	26/02/2021	Marcin Magdziarek	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
SPJJ-1 / 0.20 - 0.20 / SOLID / 16/02/2021 00:00:00 / 18/02/2021 05:00:00 / 210218-32 / 23748172 / TM048	26/02/2021	Agnieszka Chelmowska	Loose fibres in soil	Not Detected (#)	Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
SPJJ-3 / 0.20 - 0.20 / SOLID / 16/02/2021 00:00:00 / 18/02/2021 05:00:00 / 210218-32 / 23748241 / TM048	26/02/2021	Agnieszka Chelmowska	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
SPLB-1 / 0.20 - 0.20 / SOLID / 16/02/2021 00:00:00 / 18/02/2021 05:00:00 / 210218-32 / 23747877 / TM048	26/02/2021	Agnieszka Chelmowska	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
SPLB-3 / 0.20 - 0.20 / SOLID / 16/02/2021 00:00:00 / 18/02/2021 05:00:00 / 210218-32 / 23748025 / TM048	26/02/2021	Agnieszka Chelmowska	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
W35-1 / 0.20 - 0.20 / SOLID / 16/02/2021 00:00:00 / 18/02/2021 05:00:00 / 210218-32 / 23747902 / TM048	25/02/2021	Agnieszka Chelmowska	Loose fibres in soil	Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
W35-3 / 0.20 - 0.20 / SOLID / 16/02/2021 00:00:00 / 18/02/2021 05:00:00 / 210218-32 / 23747914 / TM048	25/02/2021	Paul Poynton	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected

CERTIFICATE OF ANALYSIS

SDG:	210218-32	**Client Reference:**	P18-669	**Report Number:**	589805
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	589801

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthophyllite	Fibrous Tremolite	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	W35-5 0.20 - 0.20 SOLID 16/02/2021 00:00:00 18/02/2021 05:00:00 210218-32 23747924 TM048	25/02/2021	Paul Poynton	Loose fibres in soil	Trace (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	W129-1 0.20 - 0.20 SOLID 17/02/2021 00:00:00 18/02/2021 05:00:00 210218-32 23748130 TM048	26/02/2021	Marcin Magdziarek	Loose fibres in soil	Not Detected (#)	Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	W131-1 0.20 - 0.20 SOLID 17/02/2021 00:00:00 18/02/2021 05:00:00 210218-32 23747982 TM048	26/02/2021	Agnieszka Chelmowska	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	W131-3 0.20 - 0.20 SOLID 17/02/2021 00:00:00 18/02/2021 05:00:00 210218-32 23748000 TM048	26/02/2021	Marcin Magdziarek	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	W156-1 0.20 - 0.20 SOLID 17/02/2021 00:00:00 18/02/2021 05:00:00 210218-32 23748017 TM048	25/02/2021	Agnieszka Chelmowska	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	W156-3 0.20 - 0.20 SOLID 17/02/2021 00:00:00 18/02/2021 05:00:00 210218-32 23748046 TM048	26/02/2021	Marcin Magdziarek	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	W156-5 0.20 - 0.20 SOLID 17/02/2021 00:00:00 18/02/2021 05:00:00 210218-32 23748060 TM048	26/02/2021	Agnieszka Chelmowska	Loose fibres in soil	Not Detected (#)	Trace (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	W156-7 0.20 - 0.20 SOLID 17/02/2021 00:00:00 18/02/2021 05:00:00 210218-32 23748072 TM048	25/02/2021	Paul Poynton	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	W156-9 0.20 - 0.20 SOLID 17/02/2021 00:00:00 18/02/2021 05:00:00 210218-32 23748084 TM048	25/02/2021	Agnieszka Chelmowska	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected

CERTIFICATE OF ANALYSIS

SDG:	210218-32	**Client Reference:**	P18-669	**Report Number:**	589805
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	589801

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthophyllite	Fibrous Tremolite	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	W206-1 0.20 - 0.20 SOLID 17/02/2021 00:00:00 18/02/2021 05:00:00 210218-32 23748094 TM048	25/02/2021	Agnieszka Chelmowska	Loose fibres in soil	Trace (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	W206-3 0.20 - 0.20 SOLID 17/02/2021 00:00:00 18/02/2021 05:00:00 210218-32 23748115 TM048	26/02/2021	Marcin Magdziarek	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	W208-1 0.20 - 0.20 SOLID 17/02/2021 00:00:00 18/02/2021 05:00:00 210218-32 23748200 TM048	26/02/2021	Agnieszka Chelmowska	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	W209-1 0.20 - 0.20 SOLID 17/02/2021 00:00:00 18/02/2021 05:00:00 210218-32 23747937 TM048	25/02/2021	Marcin Magdziarek	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	W209-3 0.20 - 0.20 SOLID 17/02/2021 00:00:00 18/02/2021 05:00:00 210218-32 23747954 TM048	25/02/2021	Paul Poynton	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	W209-5 0.20 - 0.20 SOLID 17/02/2021 00:00:00 18/02/2021 05:00:00 210218-32 23747966 TM048	26/02/2021	Agnieszka Chelmowska	Loose fibres in soil	Not Detected (#)	Trace (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	W209B-1 0.20 - 0.20 SOLID 17/02/2021 00:00:00 18/02/2021 05:00:00 210218-32 23748142 TM048	25/02/2021	Agnieszka Chelmowska	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	W209B-3 0.20 - 0.20 SOLID 17/02/2021 00:00:00 18/02/2021 05:00:00 210218-32 23748156 TM048	26/02/2021	Agnieszka Chelmowska	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	W209C-1 0.20 - 0.20 SOLID 17/02/2021 00:00:00 18/02/2021 05:00:00 210218-32 23748167 TM048	25/02/2021	Marcin Magdziarek	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected

Validated

CERTIFICATE OF ANALYSIS

SDG:	210218-32	**Client Reference:**	P18-669	**Report Number:**	589805
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	589801

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthophyllite	Fibrous Tremolite	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	W209C-3 0.20 - 0.20 SOLID 17/02/2021 00:00:00 18/02/2021 05:00:00 210218-32 23748183 TM048	01/03/2021	Paul Poynton	Loose fibres in soil	Not Detected (#)	Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected

CERTIFICATE OF ANALYSIS

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Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	589801

Asbestos Quantification - Full

Results Legend

#	ISO17025 accredited.
M	*m*CERTS accredited.
*	Subcontracted test.
(F)	Trigger breach confirmed
1-5&♦§@	Sample deviation (see appendix)

		Additional Asbestos Components	Analysts Comments	Asbestos Quantification - Gravimetric - %	Asbestos Quantification - PCOM	Asbestos Quantification - Total - %
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	SPJJ-1 0.20 - 0.20 SOLID 16/02/2021 00:00:00 18/02/2021 05:00:00 210218-32 23748172 TM304	None (#)	-	<0.001 (#)	<0.001 (#)	<0.001 (#)
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	W35-1 0.20 - 0.20 SOLID 16/02/2021 00:00:00 18/02/2021 05:00:00 210218-32 23747902 TM304	None (#)	N/a	<0.001 (#)	<0.001 (#)	0.0015 (#)
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	W35-5 0.20 - 0.20 SOLID 16/02/2021 00:00:00 18/02/2021 05:00:00 210218-32 23747924 TM304	None (#)	-	<0.001 (#)	<0.001 (#)	<0.001 (#)
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	W129-1 0.20 - 0.20 SOLID 17/02/2021 00:00:00 18/02/2021 05:00:00 210218-32 23748130 TM304	None (#)	-	<0.001 (#)	<0.001 (#)	<0.001 (#)
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	W156-5 0.20 - 0.20 SOLID 17/02/2021 00:00:00 18/02/2021 05:00:00 210218-32 23748060 TM304	PCM analysis detected fibres typical of amphibole asbestos. (#)	N/A	0.0349 (#)	0.0038 (#)	0.0387 (#)
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	W206-1 0.20 - 0.20 SOLID 17/02/2021 00:00:00 18/02/2021 05:00:00 210218-32 23748094 TM304	None (#)	-	<0.001 (#)	<0.001 (#)	<0.001 (#)
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	W209-5 0.20 - 0.20 SOLID 17/02/2021 00:00:00 18/02/2021 05:00:00 210218-32 23747966 TM304	None (#)	-	<0.001 (#)	<0.001 (#)	<0.001 (#)
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	W209C-3 0.20 - 0.20 SOLID 17/02/2021 00:00:00 18/02/2021 05:00:00 210218-32 23748183 TM304	None (#)	-	<0.001 (#)	<0.001 (#)	<0.001 (#)

CERTIFICATE OF ANALYSIS

SDG:	210218-32	**Client Reference:**	P18-669	**Report Number:**	589805
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	589801

Table of Results - Appendix

Method No	Reference	Description
PM024	Modified BS 1377	Soil preparation including homogenisation, moisture screens of soils for Asbestos Containing Material
TM024	Method 4500A & B, AWWA/APHA, 20th Ed., 1999	Determination of Exchangeable Ammonium and Ammoniacal Nitrogen as N by titration on solids
TM048	HSG 248, Asbestos: The analysts' guide for sampling, analysis and clearance procedures	Identification of Asbestos in Bulk Material
TM062 (S)	National Grid Property Holdings Methods for the Collection & Analysis of Samples from National Grid Sites version 1 Sec 3.9	Determination of Phenols in Soils by HPLC
TM089	Modified: US EPA Methods 8020 & 602	Determination of Gasoline Range Hydrocarbons (GRO) by Headspace GC-FID (C4-C12)
TM116	Modified: US EPA Method 8260, 8120, 8020, 624, 610 & 602	Determination of Volatile Organic Compounds by Headspace / GC-MS
TM132	In - house Method	ELTRA CS800 Operators Guide
TM133	BS 1377: Part 3 1990;BS 6068-2.5	Determination of pH in Soil and Water using the GLpH pH Meter
TM153	Method 4500A,B,C, I, M AWWA/APHA, 20th Ed., 1999	Determination of Total Cyanide, Free (Easily Liberatable) Cyanide and Thiocyanate using the Skalar SANS+ System Segmented Flow Analyser
TM181	US EPA Method 6010B	Determination of Routine Metals in Soil by iCap 6500 Duo ICP-OES
TM218	Shaker extraction - EPA method 3546.	The determination of PAH in soil samples by GC-MS
TM304	HSE Contract research Report no 83/1996	Asbestos Quantification in Soil: Fibres identified by morphology only
TM414	Analysis of Petroleum Hydrocarbons in Environmental Media – Total Petroleum Hydrocarbon Criteria	Determination of Speciated Extractable Petroleum Hydrocarbons in Soils by GCxGC-FID

NA = not applicable.

Chemical testing (unless subcontracted) performed at ALS Life Sciences Ltd Hawarden (Method codes TM) or ALS Life Sciences Ltd Aberdeen (Method codes S).

CERTIFICATE OF ANALYSIS

SDG:	210218-32	**Client Reference:**	P18-669	**Report Number:**	589805
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	589801

Test Completion Dates

Lab Sample No(s)	23748251	23747881	23747887	23747896	23748172	23748234	23748241	23748245	23747877	23747944
Customer Sample Ref.	SPDL-1	SPDL-2	SPDL-3	SPDL-4	SPJJ-1	SPJJ-2	SPJJ-3	SPJJ-4	SPLB-1	SPLB-2
AGS Ref.										
Depth	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
Ammonium Soil by Titration	01-Mar-2021	25-Feb-2021	01-Mar-2021	25-Feb-2021	01-Mar-2021	01-Mar-2021	01-Mar-2021	01-Mar-2021	01-Mar-2021	01-Mar-2021
Asbestos ID in Solid Samples	25-Feb-2021		26-Feb-2021		26-Feb-2021		26-Feb-2021		26-Feb-2021	
Asbestos Quantification - Full					05-Mar-2021					
Cyanide Comp/Free/Total/Thiocyanate	01-Mar-2021	01-Mar-2021	01-Mar-2021	01-Mar-2021	01-Mar-2021	01-Mar-2021	01-Mar-2021	26-Feb-2021	26-Feb-2021	26-Feb-2021
EPH CWG GC (S)	24-Feb-2021	24-Feb-2021	24-Feb-2021	24-Feb-2021	24-Feb-2021	24-Feb-2021	24-Feb-2021	24-Feb-2021	24-Feb-2021	22-Feb-2021
GRO by GC-FID (S)	01-Mar-2021	01-Mar-2021	26-Feb-2021	26-Feb-2021	01-Mar-2021	26-Feb-2021	26-Feb-2021	26-Feb-2021	26-Feb-2021	26-Feb-2021
Metals in solid samples by OES	01-Mar-2021	01-Mar-2021	25-Feb-2021	03-Mar-2021	01-Mar-2021	08-Mar-2021	01-Mar-2021	01-Mar-2021	25-Feb-2021	01-Mar-2021
PAH by GCMS	25-Feb-2021	25-Feb-2021	23-Feb-2021	23-Feb-2021	25-Feb-2021	25-Feb-2021	01-Mar-2021	25-Feb-2021	25-Feb-2021	26-Feb-2021
pH	22-Feb-2021	19-Feb-2021	23-Feb-2021	19-Feb-2021	22-Feb-2021	22-Feb-2021	22-Feb-2021	19-Feb-2021	19-Feb-2021	19-Feb-2021
Phenols by HPLC (S)	25-Feb-2021	23-Feb-2021	25-Feb-2021	23-Feb-2021	23-Feb-2021	25-Feb-2021	25-Feb-2021	23-Feb-2021	24-Feb-2021	24-Feb-2021
Sample description	19-Feb-2021	18-Feb-2021	19-Feb-2021	18-Feb-2021	18-Feb-2021	19-Feb-2021	19-Feb-2021	18-Feb-2021	18-Feb-2021	18-Feb-2021
Total Organic Carbon	26-Feb-2021	26-Feb-2021	26-Feb-2021	26-Feb-2021	26-Feb-2021	26-Feb-2021	26-Feb-2021	26-Feb-2021	26-Feb-2021	26-Feb-2021
TPH CWG GC (S)	01-Mar-2021	01-Mar-2021	26-Feb-2021	26-Feb-2021	01-Mar-2021	26-Feb-2021	26-Feb-2021	26-Feb-2021	26-Feb-2021	26-Feb-2021
VOC MS (S)	26-Feb-2021	26-Feb-2021	26-Feb-2021	26-Feb-2021	26-Feb-2021	26-Feb-2021	26-Feb-2021	26-Feb-2021	26-Feb-2021	26-Feb-2021

Lab Sample No(s)	23748025	23748100	23747902	23747909	23747914	23747921	23747924	23747930	23748130	23748135
Customer Sample Ref.	SPLB-3	SPLB-4	W35-1	W35-2	W35-3	W35-4	W35-5	W35-6	W129-1	W129-2
AGS Ref.										
Depth	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
Ammonium Soil by Titration	01-Mar-2021	01-Mar-2021	01-Mar-2021	01-Mar-2021	01-Mar-2021	01-Mar-2021	25-Feb-2021	01-Mar-2021	01-Mar-2021	01-Mar-2021
Asbestos ID in Solid Samples	26-Feb-2021		25-Feb-2021		25-Feb-2021		25-Feb-2021		26-Feb-2021	
Asbestos Quantification - Full			09-Mar-2021				05-Mar-2021		08-Mar-2021	
Cyanide Comp/Free/Total/Thiocyanate	24-Feb-2021	01-Mar-2021	01-Mar-2021	01-Mar-2021	26-Feb-2021	01-Mar-2021	26-Feb-2021	26-Feb-2021	01-Mar-2021	26-Feb-2021
EPH CWG GC (S)	24-Feb-2021	24-Feb-2021	24-Feb-2021	22-Feb-2021	24-Feb-2021	24-Feb-2021	22-Feb-2021	24-Feb-2021	24-Feb-2021	24-Feb-2021
GRO by GC-FID (S)	26-Feb-2021	01-Mar-2021	26-Feb-2021	26-Feb-2021	01-Mar-2021	01-Mar-2021	26-Feb-2021	26-Feb-2021	01-Mar-2021	01-Mar-2021
Metals in solid samples by OES	01-Mar-2021	01-Mar-2021	01-Mar-2021	01-Mar-2021	01-Mar-2021	01-Mar-2021	08-Mar-2021	01-Mar-2021	08-Mar-2021	01-Mar-2021
PAH by GCMS	25-Feb-2021	25-Feb-2021	25-Feb-2021	25-Feb-2021	25-Feb-2021	25-Feb-2021	23-Feb-2021	25-Feb-2021	25-Feb-2021	25-Feb-2021
pH	23-Feb-2021	22-Feb-2021	23-Feb-2021	19-Feb-2021	19-Feb-2021	19-Feb-2021	19-Feb-2021	19-Feb-2021	19-Feb-2021	19-Feb-2021
Phenols by HPLC (S)	25-Feb-2021	25-Feb-2021	25-Feb-2021	23-Feb-2021	23-Feb-2021	25-Feb-2021	23-Feb-2021	23-Feb-2021	23-Feb-2021	23-Feb-2021
Sample description	19-Feb-2021	19-Feb-2021	19-Feb-2021	18-Feb-2021	18-Feb-2021	19-Feb-2021	18-Feb-2021	18-Feb-2021	18-Feb-2021	18-Feb-2021
Total Organic Carbon	26-Feb-2021	26-Feb-2021	26-Feb-2021	26-Feb-2021	26-Feb-2021	26-Feb-2021	26-Feb-2021	26-Feb-2021	26-Feb-2021	26-Feb-2021
TPH CWG GC (S)	26-Feb-2021	01-Mar-2021	26-Feb-2021	26-Feb-2021	01-Mar-2021	01-Mar-2021	26-Feb-2021	26-Feb-2021	01-Mar-2021	01-Mar-2021
VOC MS (S)	26-Feb-2021	26-Feb-2021	26-Feb-2021	26-Feb-2021	26-Feb-2021	26-Feb-2021	26-Feb-2021	26-Feb-2021	26-Feb-2021	26-Feb-2021

Lab Sample No(s)	23747982	23747988	23748000	23748009	23748017	23748032	23748046	23748052	23748060	23748067
Customer Sample Ref.	W131-1	W131-2	W131-3	W131-4	W156-1	W156-2	W156-3	W156-4	W156-5	W156-6
AGS Ref.										
Depth	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
Ammonium Soil by Titration	01-Mar-2021	01-Mar-2021	01-Mar-2021	01-Mar-2021	01-Mar-2021	01-Mar-2021	01-Mar-2021	01-Mar-2021	01-Mar-2021	01-Mar-2021
Asbestos ID in Solid Samples	26-Feb-2021		26-Feb-2021		25-Feb-2021		26-Feb-2021		26-Feb-2021	
Asbestos Quantification - Full									08-Mar-2021	
Cyanide Comp/Free/Total/Thiocyanate	26-Feb-2021	26-Feb-2021	22-Feb-2021	01-Mar-2021	26-Feb-2021	26-Feb-2021	01-Mar-2021	01-Mar-2021	26-Feb-2021	26-Feb-2021
EPH CWG GC (S)	22-Feb-2021	22-Feb-2021	22-Feb-2021	24-Feb-2021	23-Feb-2021	22-Feb-2021	22-Feb-2021	24-Feb-2021	24-Feb-2021	24-Feb-2021
GRO by GC-FID (S)	26-Feb-2021	26-Feb-2021	26-Feb-2021	26-Feb-2021	26-Feb-2021	01-Mar-2021	25-Feb-2021	26-Feb-2021	26-Feb-2021	26-Feb-2021
Metals in solid samples by OES	25-Feb-2021	01-Mar-2021	01-Mar-2021	01-Mar-2021	01-Mar-2021	01-Mar-2021	02-Mar-2021	01-Mar-2021	01-Mar-2021	02-Mar-2021
PAH by GCMS	01-Mar-2021	25-Feb-2021	26-Feb-2021	25-Feb-2021	25-Feb-2021	25-Feb-2021	23-Feb-2021	26-Feb-2021	23-Feb-2021	25-Feb-2021
pH	19-Feb-2021	19-Feb-2021	19-Feb-2021	22-Feb-2021	19-Feb-2021	19-Feb-2021	19-Feb-2021	19-Feb-2021	19-Feb-2021	19-Feb-2021
Phenols by HPLC (S)	23-Feb-2021	25-Feb-2021	23-Feb-2021	25-Feb-2021	23-Feb-2021	23-Feb-2021	23-Feb-2021	23-Feb-2021	25-Feb-2021	23-Feb-2021
Sample description	18-Feb-2021	18-Feb-2021	18-Feb-2021	19-Feb-2021	18-Feb-2021	18-Feb-2021	18-Feb-2021	18-Feb-2021	18-Feb-2021	18-Feb-2021
Total Organic Carbon	26-Feb-2021	26-Feb-2021	26-Feb-2021	26-Feb-2021	26-Feb-2021	26-Feb-2021	26-Feb-2021	26-Feb-2021	26-Feb-2021	26-Feb-2021
TPH CWG GC (S)	26-Feb-2021	26-Feb-2021	26-Feb-2021	26-Feb-2021	26-Feb-2021	01-Mar-2021	26-Feb-2021	26-Feb-2021	26-Feb-2021	26-Feb-2021
VOC MS (S)	26-Feb-2021	26-Feb-2021	26-Feb-2021	26-Feb-2021	26-Feb-2021	26-Feb-2021	26-Feb-2021	26-Feb-2021	26-Feb-2021	26-Feb-2021

Validated

CERTIFICATE OF ANALYSIS

SDG:	210218-32	**Client Reference:**	P18-669	**Report Number:**	589805
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	589801

Lab Sample No(s)	23748072	23748077	23748084	23748094	23748105	23748115	23748120	23748200	23748230	23747937
Customer Sample Ref.	W156-7	W156-8	W156-9	W206-1	W206-2	W206-3	W206-4	W208-1	W208-2	W209-1
AGS Ref.										
Depth	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
Ammonium Soil by Titration	01-Mar-2021	25-Feb-2021	01-Mar-2021	25-Feb-2021	25-Feb-2021	01-Mar-2021	25-Feb-2021	01-Mar-2021	01-Mar-2021	01-Mar-2021
Asbestos ID in Solid Samples	25-Feb-2021		25-Feb-2021	25-Feb-2021		26-Feb-2021		26-Feb-2021		25-Feb-2021
Asbestos Quantification - Full				08-Mar-2021						
Cyanide Comp/Free/Total/Thiocyanate	01-Mar-2021	01-Mar-2021	01-Mar-2021	26-Feb-2021	01-Mar-2021	01-Mar-2021	26-Feb-2021	01-Mar-2021	01-Mar-2021	01-Mar-2021
EPH CWG GC (S)	22-Feb-2021	24-Feb-2021	22-Feb-2021	24-Feb-2021	22-Feb-2021	23-Feb-2021	24-Feb-2021	22-Feb-2021	24-Feb-2021	24-Feb-2021
GRO by GC-FID (S)	26-Feb-2021	26-Feb-2021	26-Feb-2021	01-Mar-2021	01-Mar-2021	01-Mar-2021	01-Mar-2021	26-Feb-2021	01-Mar-2021	26-Feb-2021
Metals in solid samples by OES	08-Mar-2021	01-Mar-2021	06-Mar-2021	01-Mar-2021	01-Mar-2021	02-Mar-2021	01-Mar-2021	02-Mar-2021	01-Mar-2021	01-Mar-2021
PAH by GCMS	01-Mar-2021	25-Feb-2021	25-Feb-2021	25-Feb-2021	26-Feb-2021	23-Feb-2021	26-Feb-2021	25-Feb-2021	25-Feb-2021	25-Feb-2021
pH	19-Feb-2021	19-Feb-2021	19-Feb-2021	19-Feb-2021	19-Feb-2021	19-Feb-2021	19-Feb-2021	19-Feb-2021	19-Feb-2021	22-Feb-2021
Phenols by HPLC (S)	23-Feb-2021	23-Feb-2021	23-Feb-2021	23-Feb-2021	23-Feb-2021	23-Feb-2021	23-Feb-2021	23-Feb-2021	25-Feb-2021	25-Feb-2021
Sample description	18-Feb-2021	18-Feb-2021	18-Feb-2021	18-Feb-2021	18-Feb-2021	18-Feb-2021	18-Feb-2021	18-Feb-2021	19-Feb-2021	19-Feb-2021
Total Organic Carbon	26-Feb-2021	26-Feb-2021	26-Feb-2021	26-Feb-2021	26-Feb-2021	26-Feb-2021	26-Feb-2021	26-Feb-2021	26-Feb-2021	26-Feb-2021
TPH CWG GC (S)	26-Feb-2021	26-Feb-2021	26-Feb-2021	01-Mar-2021	01-Mar-2021	01-Mar-2021	01-Mar-2021	26-Feb-2021	01-Mar-2021	26-Feb-2021
VOC MS (S)	26-Feb-2021	26-Feb-2021	26-Feb-2021	26-Feb-2021	26-Feb-2021	26-Feb-2021	26-Feb-2021	26-Feb-2021	26-Feb-2021	26-Feb-2021

Lab Sample No(s)	23747950	23747954	23747961	23747966	23747973	23748089	23748142	23748146	23748156	23748161
Customer Sample Ref.	W209-2	W209-3	W209-4	W209-5	W209-6	W156-10	W209B-1	W209B-2	W209B-3	W209B-4
AGS Ref.										
Depth	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
Ammonium Soil by Titration	01-Mar-2021	01-Mar-2021	01-Mar-2021	23-Feb-2021	01-Mar-2021	01-Mar-2021	25-Feb-2021	25-Feb-2021	01-Mar-2021	25-Feb-2021
Asbestos ID in Solid Samples		25-Feb-2021		26-Feb-2021			25-Feb-2021		26-Feb-2021	
Asbestos Quantification - Full				05-Mar-2021						
Cyanide Comp/Free/Total/Thiocyanate	22-Feb-2021	01-Mar-2021	01-Mar-2021	22-Feb-2021	01-Mar-2021	01-Mar-2021	26-Feb-2021	01-Mar-2021	01-Mar-2021	26-Feb-2021
EPH CWG GC (S)	22-Feb-2021	24-Feb-2021	22-Feb-2021	22-Feb-2021	22-Feb-2021	24-Feb-2021	22-Feb-2021	22-Feb-2021	24-Feb-2021	24-Feb-2021
GRO by GC-FID (S)	01-Mar-2021	01-Mar-2021	25-Feb-2021	01-Mar-2021	26-Feb-2021	01-Mar-2021	01-Mar-2021	01-Mar-2021	01-Mar-2021	26-Feb-2021
Metals in solid samples by OES	01-Mar-2021	01-Mar-2021	01-Mar-2021	08-Mar-2021	25-Feb-2021	01-Mar-2021	02-Mar-2021	01-Mar-2021	01-Mar-2021	01-Mar-2021
PAH by GCMS	26-Feb-2021	26-Feb-2021	25-Feb-2021	24-Feb-2021	26-Feb-2021	25-Feb-2021	01-Mar-2021	01-Mar-2021	23-Feb-2021	25-Feb-2021
pH	19-Feb-2021	19-Feb-2021	19-Feb-2021	19-Feb-2021	19-Feb-2021	19-Feb-2021	19-Feb-2021	19-Feb-2021	23-Feb-2021	19-Feb-2021
Phenols by HPLC (S)	23-Feb-2021	23-Feb-2021	23-Feb-2021	22-Feb-2021	23-Feb-2021	25-Feb-2021	23-Feb-2021	23-Feb-2021	25-Feb-2021	23-Feb-2021
Sample description	18-Feb-2021	18-Feb-2021	18-Feb-2021	18-Feb-2021	18-Feb-2021	19-Feb-2021	18-Feb-2021	18-Feb-2021	19-Feb-2021	18-Feb-2021
Total Organic Carbon	26-Feb-2021	26-Feb-2021	26-Feb-2021	26-Feb-2021	26-Feb-2021	26-Feb-2021	26-Feb-2021	26-Feb-2021	26-Feb-2021	01-Mar-2021
TPH CWG GC (S)	01-Mar-2021	01-Mar-2021	26-Feb-2021	01-Mar-2021	26-Feb-2021	01-Mar-2021	01-Mar-2021	01-Mar-2021	01-Mar-2021	26-Feb-2021
VOC MS (S)	26-Feb-2021	26-Feb-2021	26-Feb-2021	26-Feb-2021	26-Feb-2021	26-Feb-2021	26-Feb-2021	26-Feb-2021	26-Feb-2021	26-Feb-2021

Lab Sample No(s)	23748167	23748178	23748183	23748191
Customer Sample Ref.	W209C-1	W209C-2	W209C-3	W209C-4
AGS Ref.				
Depth	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
Ammonium Soil by Titration	25-Feb-2021	01-Mar-2021	25-Feb-2021	01-Mar-2021
Asbestos ID in Solid Samples	25-Feb-2021		01-Mar-2021	
Asbestos Quantification - Full			08-Mar-2021	
Cyanide Comp/Free/Total/Thiocyanate	01-Mar-2021	26-Feb-2021	26-Feb-2021	26-Feb-2021
EPH CWG GC (S)	22-Feb-2021	24-Feb-2021	24-Feb-2021	24-Feb-2021
GRO by GC-FID (S)	26-Feb-2021	01-Mar-2021	01-Mar-2021	26-Feb-2021
Metals in solid samples by OES	01-Mar-2021	02-Mar-2021	02-Mar-2021	25-Feb-2021
PAH by GCMS	26-Feb-2021	25-Feb-2021	25-Feb-2021	25-Feb-2021
pH	19-Feb-2021	19-Feb-2021	19-Feb-2021	19-Feb-2021
Phenols by HPLC (S)	23-Feb-2021	24-Feb-2021	23-Feb-2021	25-Feb-2021
Sample description	18-Feb-2021	18-Feb-2021	18-Feb-2021	18-Feb-2021
Total Organic Carbon	26-Feb-2021	26-Feb-2021	26-Feb-2021	26-Feb-2021
TPH CWG GC (S)	26-Feb-2021	01-Mar-2021	01-Mar-2021	26-Feb-2021
VOC MS (S)	26-Feb-2021	26-Feb-2021	26-Feb-2021	26-Feb-2021

Appendix General

1. Results are expressed on a dry weight basis (dried at 35ºC) for all soil analyses except for the following: NRA and CEN Leach tests, flash point LOI, pH, ammonium as NH4 by the BRE method, VOC TICs and SVOC TICs.

2. If sufficient sample is received a sub sample will be retained free of charge for 30 days after analysis is completed (e-mailed) for all sample types unless the sample is destroyed on testing. The prepared soil sub sample that is analysed for asbestos will be retained for a period of 6 months after the analysis date. All bulk samples will be retained for a period of 6 months after the analysis date. All samples received and not scheduled will be disposed of one month after the date of receipt unless we are instructed to the contrary. Once the initial period has expired, a storage charge will be applied for each month or part thereof until the client cancels the request for sample storage. ALS reserve the right to charge for samples received and stored but not analysed.

3. With respect to turnaround, we will always endeavour to meet client requirements wherever possible, but turnaround times cannot be absolutely guaranteed due to so many variables beyond our control.

4. We take responsibility for any test performed by sub-contractors (marked with an asterisk). We endeavour to use UKAS/MCERTS Accredited Laboratories, who either complete a quality questionnaire or are audited by ourselves. For some determinands there are no UKAS/MCERTS Accredited Laboratories, in this instance a laboratory with a known track record will be utilised.

5. If no separate volatile sample is supplied by the client, or if a headspace or sediment is present in the volatile sample, the integrity of the data may be compromised. This will be flagged up as an invalid VOC on the test schedule and the result marked as deviating on the test certificate.

6. NDP - No determination possible due to insufficient/unsuitable sample.

7. Results relate only to the items tested.

8. LoDs (Limit of Detection) for wet tests reported on a dry weight basis are not corrected for moisture content.

9. **Surrogate recoveries** - Surrogates are added to your sample to monitor recovery of the test requested. A % recovery is reported, results are not corrected for the recovery measured. Typical recoveries for organics tests are 70-130%. Recoveries in soils are affected by organic rich or clay rich matrices. Waters can be affected by remediation fluids or high amounts of sediment. Test results are only ever reported if all of the associated quality checks pass; it is assumed that all recoveries outside of the values above are due to matrix affect.

10. Stones/debris are not routinely removed. We always endeavour to take a representative sub sample from the received sample.

11. In certain circumstances the method detection limit may be elevated due to the sample being outside the calibration range. Other factors that may contribute to this include possible interferences. In both cases the sample would be diluted which would cause the method detection limit to be raised.

12. Mercury results quoted on soils will not include volatile mercury as the analysis is performed on a dried and crushed sample.

13. For leachate preparations other than Zero Headspace Extraction (ZHE) volatile loss may occur.

14. For the BSEN 12457-3 two batch process to allow the cumulative release to be calculated, the volume of the leachate produced is measured and filtered for all tests. We therefore cannot carry out any unfiltered analysis. The tests affected include volatiles GCFID/GCMS and all subcontracted analysis.

15. Analysis and identification of specific compounds using GCFID is by retention time only, and we routinely calibrate and quantify for benzene, toluene, ethylbenzenes and xylenes (BTEX). For total volatiles in the C5-C12 range, the total area of the chromatogram is integrated and expressed as ug/kg or ug/l. Although this analysis is commonly used for the quantification of gasoline range organics (GRO), the system will also detect other compounds such as chlorinated solvents, and this may lead to a falsely high result with respect to hydrocarbons only. It is not possible to specifically identify these non-hydrocarbons, as standards are not routinely run for any other compounds, and for more definitive identification, volatiles by GCMS should be utilised.

16. We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample. Other coarse granular material such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

17. **Tentatively Identified Compounds (TICs)** are non-target peaks in VOC and SVOC analysis. All non-target peaks detected with a concentration above the LoD are subjected to a mass spectral library search. Non-target peaks with a library search confidence of >75% are reported based on the best mass spectral library match. When a non-target peak with a library search confidence of <75% is detected it is reported as "mixed hydrocarbons". Non-target compounds identified from the scan data are semi-quantified relative to one of the deuterated internal standards, under the same chromatographic conditions as the target compounds. This result is reported as a semi-quantitative value and reported as Tentatively Identified Compounds (TICs). TICs are outside the scope of UKAS accreditation and are not moisture corrected.

18. **Sample Deviations**

If a sample is classed as deviated then the associated results may be compromised.

1	**Container with Headspace provided for volatiles analysis**
2	**Incorrect container received**
3	**Deviation from method**
4	**Matrix interference**
♦	**Sample holding time exceeded in laboratory**
@	**Sample holding time exceeded due to late arrival of instructions or samples**
§	**Sampled on date not provided**

19. **Asbestos**

When requested, the individual sub sample scheduled will be analysed in house for the presence of asbestos fibres and asbestos containing material by our documented in house method TM048 based on HSG 248 (2005), which is accredited to ISO17025. If a specific asbestos fibre type is not found this will be reported as "Not detected". If no asbestos fibre types are found all will be reported as "Not detected" and the sub sample analysed deemed to be clear of asbestos. If an asbestos fibre type is found it will be reported as detected (for each fibre type found). Testing can be carried out on asbestos positive samples, but, due to Health and Safety considerations, may be replaced by alternative tests or reported as No Determination Possible (NDP). The quantity of asbestos present is not determined unless specifically requested.

Identification of Asbestos in Bulk Materials & Soils

The results for identification of asbestos in bulk materials are obtained from supplied bulk materials which have been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

The results for identification of asbestos in soils are obtained from a homogenised sub sample which has been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

Asbestos Type	Common Name
Chrysotile	White Asbestos
Amosite	Brown Asbestos
Crocidolite	Blue Asbestos
Fibrous Actinolite	-
Fibrous Anthophyllite	-
Fibrous Tremolite	-

Visual Estimation Of Fibre Content

Estimation of fibre content is not permitted as part of our UKAS accredited test other than: - Trace - Where only one or two asbestos fibres were identified.

Respirable Fibres

Respirable fibres are defined as fibres of <3 µm diameter, longer than 5 µm and with aspect ratios of at least 3:1 that can be inhaled into the lower regions of the lung and are generally acknowledged to be most important predictor of hazard and risk for cancers of the lung.
Standing Committee of Analysts, *The Quantification of Asbestos in Soil (2017).*

Further guidance on typical asbestos fibre content of manufactured products can be found in HSG 264.

The identification of asbestos containing materials and soils falls within our schedule of tests for which we hold UKAS accreditation, however opinions, interpretations and all other information contained in the report are outside the scope of UKAS accreditation.

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Hawarden
Deeside
CH5 3US
Tel: (01244) 528700
Fax: (01244) 528701
email: hawardencustomerservices@alsglobal.com
Website: www.alsenvironmental.co.uk

Rodgers Leask
Office 225
2430/2440
Aztec West
Almondsbury
Bristol
BS32 4QA

Attention: Elliot Thomas

CERTIFICATE OF ANALYSIS

Date of report Generation:	08 March 2021
Customer:	Rodgers Leask
Sample Delivery Group (SDG):	210219-92
Your Reference:	P18-669
Location:	Llanwern
Report No:	589611

This report has been revised and directly supersedes 589297 in its entirety.

We received 38 samples on Friday February 19, 2021 and 38 of these samples were scheduled for analysis which was completed on Monday March 08, 2021. Accredited laboratory tests are defined within the report, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation.

Should this report require incorporation into client reports, it must be used in its entirety and not simply with the data sections alone.

Chemical testing (unless subcontracted) performed at ALS Life Sciences Ltd Hawarden (Method codes TM) or ALS Life Sciences Ltd Aberdeen (Method codes S).

All sample data is provided by the customer. The reported results relate to the sample supplied, and on the basis that this data is correct.
Incorrect sampling dates and/or sample information will affect the validity of results.
The customer is not permitted to reproduce this report except in full without the approval of the laboratory.

Approved By:

Sonia McWhan

Operations Manager

CERTIFICATE OF ANALYSIS

SDG:	210219-92	**Client Reference:**	P18-669	**Report Number:**	589611
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	589297

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
23759843	W34-1		0.20 - 0.20	18/02/2021
23759847	W34-2		0.20 - 0.20	18/02/2021
23759851	W34-3		0.20 - 0.20	18/02/2021
23759855	W34-4		0.20 - 0.20	18/02/2021
23759860	W34-5		0.20 - 0.20	18/02/2021
23759865	W34-6		0.20 - 0.20	18/02/2021
23759870	W34-7		0.20 - 0.20	18/02/2021
23759878	W34-8		0.20 - 0.20	18/02/2021
23759833	W172-1		0.20 - 0.20	18/02/2021
23759839	W172-2		0.20 - 0.20	18/02/2021
23759793	W194-1		0.20 - 0.20	18/02/2021
23759797	W194-2		0.20 - 0.20	18/02/2021
23759809	W195-1		0.20 - 0.20	18/02/2021
23759817	W195-2		0.20 - 0.20	18/02/2021
23759821	W196-1		0.20 - 0.20	18/02/2021
23759829	W196-2		0.20 - 0.20	18/02/2021
23759907	W202-1		0.20 - 0.20	18/02/2021
23759916	W202-2		0.20 - 0.20	18/02/2021
23759927	W203-1		0.20 - 0.20	18/02/2021
23759938	W203-2		0.20 - 0.20	18/02/2021
23759949	W203-3		0.20 - 0.20	18/02/2021
23759964	W203-4		0.20 - 0.20	18/02/2021
23759765	W205-1		0.20 - 0.20	17/02/2021
23759825	W205-2		0.20 - 0.20	17/02/2021
23759874	W205-3		0.20 - 0.20	17/02/2021
23759970	W205-4		0.20 - 0.20	17/02/2021
23759980	W205-5		0.20 - 0.20	17/02/2021
23759993	W205-6		0.20 - 0.20	17/02/2021
23760003	W205-7		0.20 - 0.20	17/02/2021
23760012	W205-8		0.20 - 0.20	17/02/2021
23760027	W214-1		0.20 - 0.20	17/02/2021
23759769	W214-2		0.20 - 0.20	17/02/2021
23759774	W214-3		0.20 - 0.20	17/02/2021
23759780	W214-4		0.20 - 0.20	17/02/2021
23759784	W214-5		0.20 - 0.20	17/02/2021
23759789	W214-6		0.20 - 0.20	17/02/2021
23759884	W172B-1		0.20 - 0.20	18/02/2021
23759897	W172B-2		0.20 - 0.20	18/02/2021

Only received samples which have had analysis scheduled will be shown on the following pages.

Validated

CERTIFICATE OF ANALYSIS

SDG:	210219-92	**Client Reference:**	P18-669	**Report Number:**	589611
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	589297

Results Legend

X Test

N No Determination Possible

Sample Types -

S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

Lab Sample No(s)			23759843		23759847		23759851		23759855		23759860		23759865		23759870		23759878			
Customer Sample Reference			W34-1		W34-2		W34-3		W34-4		W34-5		W34-6		W34-7		W34-8			
AGS Reference																				
Depth (m)			0.20 - 0.20		0.20 - 0.20		0.20 - 0.20		0.20 - 0.20		0.20 - 0.20		0.20 - 0.20		0.20 - 0.20		0.20 - 0.20			
Container			1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)
Sample Type			S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
Ammonium Soil by Titration	All	NDPs: 0 Tests: 38		X		X			X		X			X		X			X		X
Asbestos ID in Solid Samples	All	NDPs: 0 Tests: 19	X					X					X					X			
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 38		X		X			X		X			X		X			X		X
EPH CWG GC (S)	All	NDPs: 0 Tests: 38		X		X			X		X			X		X			X		X
GRO by GC-FID (S)	All	NDPs: 0 Tests: 38			X		X			X		X			X		X			X	
Metals in solid samples by OES	All	NDPs: 0 Tests: 38		X		X			X		X			X		X			X		X
PAH by GCMS	All	NDPs: 0 Tests: 38		X		X			X		X			X		X			X		X
pH	All	NDPs: 0 Tests: 38		X		X			X		X			X		X			X		X
Phenols by HPLC (S)	All	NDPs: 0 Tests: 38		X		X			X		X			X		X			X		X
Sample description	All	NDPs: 0 Tests: 37		X		X			X		X			X		X			X		X
Total Organic Carbon	All	NDPs: 0 Tests: 38		X		X			X		X			X		X			X		X
TPH CWG GC (S)	All	NDPs: 0 Tests: 38		X		X			X		X			X		X			X		X
VOC MS (S)	All	NDPs: 0 Tests: 38			X		X			X		X			X		X			X	

23759829	W196-2		0.20 - 0.20	60g VOC (ALE215)	S							x										x
				250g Amber Jar (ALE210)	S	x			x		x			x		x		x		x		x		
23759821	W196-1		0.20 - 0.20	60g VOC (ALE215)	S							x										x
				250g Amber Jar (ALE210)	S	x			x		x			x		x		x		x		x		
				1kg TUB with Handle (ALE260)	S			x																
23759817	W195-2		0.20 - 0.20	60g VOC (ALE215)	S							x										x
				250g Amber Jar (ALE210)	S	x			x		x			x		x		x		x		x		
23759809	W195-1		0.20 - 0.20	60g VOC (ALE215)	S							x										x
				250g Amber Jar (ALE210)	S	x			x		x			x		x		x		x		x		
				1kg TUB with Handle (ALE260)	S			x																
23759797	W194-2		0.20 - 0.20	60g VOC (ALE215)	S							x										x
				250g Amber Jar (ALE210)	S	x			x		x			x		x		x		x		x		
23759793	W194-1		0.20 - 0.20	60g VOC (ALE215)	S							x										x
				250g Amber Jar (ALE210)	S	x			x		x			x		x		x		x		x		
				1kg TUB with Handle (ALE260)	S			x																
23759839	W172-2		0.20 - 0.20	60g VOC (ALE215)	S							x										x
				250g Amber Jar (ALE210)	S	x			x		x			x		x		x		x		x		
23759833	W172-1		0.20 - 0.20	60g VOC (ALE215)	S							x										x
				250g Amber Jar (ALE210)	S	x			x		x			x		x		x		x		x		
				1kg TUB with Handle (ALE260)	S			x																
23759878	W34-8		0.20 - 0.20	60g VOC (ALE215)	S							x										x

Validated

CERTIFICATE OF ANALYSIS

SDG:	210219-92	**Client Reference:**	P18-669	**Report Number:**	589611
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	589297

Results Legend

X Test

N No Determination Possible

Sample Types -

S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

Lab Sample No(s)			23759907		23759916		23759927			23759938		23759949			23759964		23759765		23759825		
Customer Sample Reference			W202-1		W202-2		W203-1			W203-2		W203-3			W203-4		W205-1		W205-2		
AGS Reference																					
Depth (m)			0.20 - 0.20		0.20 - 0.20		0.20 - 0.20			0.20 - 0.20		0.20 - 0.20			0.20 - 0.20		0.20 - 0.20		0.20 - 0.20		
Container			1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB with Handle (ALE260)	60g VOC (ALE215)	1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)
Sample Type			S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
Ammonium Soil by Titration	All	NDPs: 0 Tests: 38		X		X			X		X			X		X			X		X
Asbestos ID in Solid Samples	All	NDPs: 0 Tests: 19	X					X					X					X			
Asbestos Quantification - Full	All	NDPs: 0 Tests: 3						X													
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 38		X		X			X		X			X		X			X		X
EPH CWG GC (S)	All	NDPs: 0 Tests: 38		X		X			X		X			X		X			X		X
GRO by GC-FID (S)	All	NDPs: 0 Tests: 38			X		X			X		X			X		X			X	
Metals in solid samples by OES	All	NDPs: 0 Tests: 38		X		X			X		X			X		X			X		X
PAH by GCMS	All	NDPs: 0 Tests: 38		X		X			X		X			X		X			X		X
pH	All	NDPs: 0 Tests: 38		X		X			X		X			X		X			X		X
Phenols by HPLC (S)	All	NDPs: 0 Tests: 38		X		X			X		X			X		X			X		X
Sample description	All	NDPs: 0 Tests: 37		X		X			X		X			X					X		X
Total Organic Carbon	All	NDPs: 0 Tests: 38		X		X			X		X			X		X			X		X
TPH CWG GC (S)	All	NDPs: 0 Tests: 38		X		X			X		X			X		X			X		X
VOC MS (S)	All	NDPs: 0 Tests: 38			X		X			X		X			X		X			X	

23759769	W214-2		0.20 - 0.20	60g VOC (ALE215)	S							x										x
				250g Amber Jar (ALE210)	S	x				x	x		x	x	x	x	x	x	x			
23760027	W214-1		0.20 - 0.20	60g VOC (ALE215)	S							x										x
				250g Amber Jar (ALE210)	S	x				x	x		x	x	x	x	x	x	x			
				1kg TUB with Handle (ALE260)	S		x	x														
23760012	W205-8		0.20 - 0.20	60g VOC (ALE215)	S							x										x
				250g Amber Jar (ALE210)	S	x				x	x		x	x	x	x	x	x	x			
23760003	W205-7		0.20 - 0.20	60g VOC (ALE215)	S							x										x
				250g Amber Jar (ALE210)	S	x				x	x		x	x	x	x	x	x	x			
				1kg TUB with Handle (ALE260)	S		x															
23759993	W205-6		0.20 - 0.20	60g VOC (ALE215)	S							x										x
				250g Amber Jar (ALE210)	S	x				x	x		x	x	x	x	x	x	x			
23759980	W205-5		0.20 - 0.20	60g VOC (ALE215)	S							x										x
				250g Amber Jar (ALE210)	S	x				x	x		x	x	x	x	x	x	x			
				1kg TUB with Handle (ALE260)	S		x															
23759970	W205-4		0.20 - 0.20	60g VOC (ALE215)	S							x										x
				250g Amber Jar (ALE210)	S	x				x	x		x	x	x	x	x	x	x			
23759874	W205-3		0.20 - 0.20	60g VOC (ALE215)	S							x										x
				250g Amber Jar (ALE210)	S	x				x	x		x	x	x	x	x	x	x			
				1kg TUB with Handle (ALE260)	S		x															
23759825	W205-2		0.20 - 0.20	60g VOC (ALE215)	S							x										x

Validated

CERTIFICATE OF ANALYSIS

SDG:	210219-92	**Client Reference:**	P18-669	**Report Number:**	589611
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	589297

Results Legend

X Test

N No Determination Possible

Sample Types -

S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

Lab Sample No(s)			23759774		23759780		23759784		23759789		23759884		23759897	
Customer Sample Reference			W214-3		W214-4		W214-5		W214-6		W172B-1		W172B-2	
AGS Reference														
Depth (m)			0.20 - 0.20		0.20 - 0.20		0.20 - 0.20		0.20 - 0.20		0.20 - 0.20		0.20 - 0.20	
Container			1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)
Sample Type			S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
Ammonium Soil by Titration	All	NDPs: 0 Tests: 38		X		X			X		X			X		X	
Asbestos ID in Solid Samples	All	NDPs: 0 Tests: 19	X					X					X				
Asbestos Quantification - Full	All	NDPs: 0 Tests: 3	X														
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 38		X		X			X		X			X		X	
EPH CWG GC (S)	All	NDPs: 0 Tests: 38		X		X			X		X			X		X	
GRO by GC-FID (S)	All	NDPs: 0 Tests: 38			X		X			X		X			X		X
Metals in solid samples by OES	All	NDPs: 0 Tests: 38		X		X			X		X			X		X	
PAH by GCMS	All	NDPs: 0 Tests: 38		X		X			X		X			X		X	
pH	All	NDPs: 0 Tests: 38		X		X			X		X			X		X	
Phenols by HPLC (S)	All	NDPs: 0 Tests: 38		X		X			X		X			X		X	
Sample description	All	NDPs: 0 Tests: 37		X		X			X		X			X		X	
Total Organic Carbon	All	NDPs: 0 Tests: 38		X		X			X		X			X		X	
TPH CWG GC (S)	All	NDPs: 0 Tests: 38		X		X			X		X			X		X	
VOC MS (S)	All	NDPs: 0 Tests: 38			X		X			X		X			X		X

CERTIFICATE OF ANALYSIS

SDG:	210219-92	**Client Reference:**	P18-669	**Report Number:**	589611
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	589297

Sample Descriptions

Grain Sizes

very fine	<0.063mm	fine	0.063mm - 0.1mm	medium	0.1mm - 2mm	coarse	2mm - 10mm	very coarse	>10mm

Lab Sample No(s)	Customer Sample Ref.	Depth (m)	Colour	Description	Inclusions	Inclusions 2
23759843	W34-1	0.20 - 0.20	Dark Brown	Silty Clay Loam	Stones	Vegetation
23759847	W34-2	0.20 - 0.20	Dark Brown	Sand	Vegetation	Stones
23759851	W34-3	0.20 - 0.20	Dark Brown	Sand	Stones	Vegetation
23759855	W34-4	0.20 - 0.20	Black	Loamy Sand	Stones	Crushed Brick
23759860	W34-5	0.20 - 0.20	Dark Brown	Sand	Vegetation	Stones
23759865	W34-6	0.20 - 0.20	Dark Brown	Silty Clay Loam	Stones	Brick
23759870	W34-7	0.20 - 0.20	Dark Brown	Sand	Stones	Vegetation
23759878	W34-8	0.20 - 0.20	Dark Brown	Sand	Stones	Vegetation
23759833	W172-1	0.20 - 0.20	Dark Brown	Silty Clay Loam	Stones	Crushed Brick
23759839	W172-2	0.20 - 0.20	Dark Brown	Sandy Loam	Stones	None
23759793	W194-1	0.20 - 0.20	Dark Brown	Loamy Sand	Stones	Brick
23759797	W194-2	0.20 - 0.20	Dark Brown	Silt Loam	Stones	None
23759809	W195-1	0.20 - 0.20	Dark Brown	Sandy Clay Loam	Stones	None
23759817	W195-2	0.20 - 0.20	Dark Brown	Sandy Clay Loam	Stones	None
23759821	W196-1	0.20 - 0.20	Light Brown	Sandy Silt Loam	Stones	None
23759829	W196-2	0.20 - 0.20	Light Brown	Loamy Sand	Stones	Vegetation
23759907	W202-1	0.20 - 0.20	Black	Loamy Sand	Stones	None
23759916	W202-2	0.20 - 0.20	Dark Brown	Sandy Loam	Stones	None
23759927	W203-1	0.20 - 0.20	Dark Brown	Sandy Loam	Stones	None
23759938	W203-2	0.20 - 0.20	Black	Sandy Loam	Stones	None
23759949	W203-3	0.20 - 0.20	Dark Brown	Sandy Loam	Stones	None
23759964	W203-4	0.20 - 0.20	Dark Brown	Sand	Stones	Vegetation
23759765	W205-1	0.20 - 0.20	Dark Brown	Sandy Loam	Stones	None
23759825	W205-2	0.20 - 0.20	Dark Brown	Sandy Clay Loam	Stones	N/A
23759874	W205-3	0.20 - 0.20	Dark Brown	Sand	Vegetation	Stones
23759970	W205-4	0.20 - 0.20	Dark Brown	Sandy Silt Loam	Vegetation	Stones
23759980	W205-5	0.20 - 0.20	Dark Brown	Sandy Loam	Stones	None
23759993	W205-6	0.20 - 0.20	Dark Brown	Sandy Clay Loam	Stones	Vegetation
23760003	W205-7	0.20 - 0.20	Dark Brown	Sandy Loam	Stones	None
23760012	W205-8	0.20 - 0.20	Dark Brown	Sandy Clay Loam	Stones	None
23760027	W214-1	0.20 - 0.20	Dark Brown	Sandy Loam	Stones	None
23759769	W214-2	0.20 - 0.20	Dark Brown	Sandy Silt Loam	Stones	None
23759774	W214-3	0.20 - 0.20	Dark Brown	Sand	Vegetation	Stones
23759780	W214-4	0.20 - 0.20	Dark Brown	Sandy Silt Loam	Stones	None
23759784	W214-5	0.20 - 0.20	Dark Brown	Sandy Silt Loam	Stones	Vegetation
23759789	W214-6	0.20 - 0.20	Dark Brown	Sandy Silt Loam	Stones	None
23759884	W172B-1	0.20 - 0.20	Dark Brown	Sandy Loam	Stones	None
23759897	W172B-2	0.20 - 0.20	Dark Brown	Sand	Stones	Vegetation

These descriptions are only intended to act as a cross check if sample identities are questioned, and to provide a log of sample matrices with respect to MCERTS validation. They are not intended as full geological descriptions.

We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally ocurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample.

Other coarse granular materials such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

Validated

CERTIFICATE OF ANALYSIS

SDG:	210219-92	**Client Reference:**	P18-669	**Report Number:**	589611
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	589297

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	W34-1	W34-2	W34-3	W34-4	W34-5	W34-6
			Depth (m)	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	18/02/2021	18/02/2021	18/02/2021	18/02/2021	18/02/2021	18/02/2021
			Sample Time	.	.	.	.	.	.
			Date Received	19/02/2021	19/02/2021	19/02/2021	19/02/2021	19/02/2021	19/02/2021
			SDG Ref	210219-92	210219-92	210219-92	210219-92	210219-92	210219-92
			Lab Sample No.(s)	23759843	23759847	23759851	23759855	23759860	23759865
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		12	12	11	10	15	13
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	<12 M	<12 M	<12 M	<12 M	<12 M
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	0.0113 M	<0.01 M	<0.01 M	<0.01 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	0.0228 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M
Soil Organic Matter (SOM)	<0.35 %	TM132		16.8 #	0.571 #	6.86 #	5.03 #	21.4 #	7.33 #
pH	1 pH Units	TM133		9.35 M	9.88 M	11.5 M	9.88 M	9.23 M	11.1 M
Cyanide, Total	<1 mg/kg	TM153		<1 M	<1 M	<1 M	<1 M	1.45 M	<1 M
Arsenic	<0.6 mg/kg	TM181		8.35 M	<6 M	<6 M	5.67 M	9.95 M	10.8 M
Cadmium	<0.02 mg/kg	TM181		0.146 M	<0.2 M	<0.2 M	<0.02 M	0.599 M	<0.02 M
Chromium	<0.9 mg/kg	TM181		47.6 M	231 M	424 M	279 M	53.4 M	178 M
Copper	<1.4 mg/kg	TM181		18.5 M	37.1 M	19.7 M	12.1 M	27 M	27.6 M
Iron	<1000 mg/kg	TM181		58600 #	109000 #	106000 #	75600 #	57300 #	176000 #
Lead	<0.7 mg/kg	TM181		207 M	77.7 M	40.5 M	32 M	388 M	110 M
Manganese	<0.13 mg/kg	TM181		5670 M	15500 M	23900 M	12400 M	5640 M	18200 M
Mercury	<0.1 mg/kg	TM181		0.176 M	<1 M	<1 M	<0.1 M	<1 M	0.253 M
Nickel	<0.2 mg/kg	TM181		11 M	21.2 M	11.6 M	8.14 M	17.3 M	25.5 M
Selenium	<1 mg/kg	TM181		2.92 #	<10 #	12.5 #	5.85 #	<10 #	6.27 #
Vanadium	<0.2 mg/kg	TM181		80.6 #	413 #	598 #	207 #	85.3 #	687 #
Zinc	<1.9 mg/kg	TM181		560 M	310 M	138 M	128 M	850 M	466 M

Validated

CERTIFICATE OF ANALYSIS

SDG:	210219-92	**Client Reference:**	P18-669	**Report Number:**	589611
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	589297

Results Legend	
#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	W34-7	W34-8	W172-1	W172-2	W194-1	W194-2
			Depth (m)	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	18/02/2021	18/02/2021	18/02/2021	18/02/2021	18/02/2021	18/02/2021
			Sample Time	.	.	.	.	.	.
			Date Received	19/02/2021	19/02/2021	19/02/2021	19/02/2021	19/02/2021	19/02/2021
			SDG Ref	210219-92	210219-92	210219-92	210219-92	210219-92	210219-92
			Lab Sample No.(s)	23759870	23759878	23759833	23759839	23759793	23759797
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		11	9.6	13	13	16	22
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	<12 M	<12 M	<12 M	<12 M	<12 M
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M
Soil Organic Matter (SOM)	<0.35 %	TM132		2.05 #	7.21 #	2.64 #	3.84 #	3.62 #	4.09 #
pH	1 pH Units	TM133		11.8 M	10.5 M	9.78 M	9.04 M	9.83 M	9.62 M
Cyanide, Total	<1 mg/kg	TM153		<1 M	<1 M	<1 M	<1 M	<1 M	<1 M
Arsenic	<0.6 mg/kg	TM181		<6 M	6.21 M	37.6 M	14.9 M	7.17 M	12.1 M
Cadmium	<0.02 mg/kg	TM181		<0.2 M	<0.02 M	<0.02 M	<0.2 M	0.0312 M	<0.2 M
Chromium	<0.9 mg/kg	TM181		404 M	149 M	91.5 M	56.6 M	25.5 M	60.3 M
Copper	<1.4 mg/kg	TM181		29.3 M	15.5 M	27.3 M	29.9 M	14 M	19.8 M
Iron	<1000 mg/kg	TM181		114000 #	48300 #	169000 #	167000 #	37100 #	47100 #
Lead	<0.7 mg/kg	TM181		37.9 M	27.8 M	33.4 M	49.7 M	42.4 M	67.8 M
Manganese	<0.13 mg/kg	TM181		25800 M	10100 M	13600 M	7580 M	2150 M	3250 M
Mercury	<0.1 mg/kg	TM181		<1 M	<0.1 M	0.38 M	<1 M	<0.1 M	<1 M
Nickel	<0.2 mg/kg	TM181		14.2 M	14.8 M	14.4 M	28.7 M	20.5 M	30.9 M
Selenium	<1 mg/kg	TM181		13.8 #	5.59 #	3.83 #	<10 #	<1 #	<10 #
Vanadium	<0.2 mg/kg	TM181		688 #	213 #	156 #	142 #	49.9 #	92.5 #
Zinc	<1.9 mg/kg	TM181		98.1 M	129 M	137 M	153 M	138 M	207 M

Validated

CERTIFICATE OF ANALYSIS

SDG:	210219-92	**Client Reference:**	P18-669	**Report Number:**	589611
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	589297

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	W195-1	W195-2	W196-1	W196-2	W202-1	W202-2
			Depth (m)	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	18/02/2021	18/02/2021	18/02/2021	18/02/2021	18/02/2021	18/02/2021
			Sample Time	.	.	.	.	.	.
			Date Received	19/02/2021	19/02/2021	19/02/2021	19/02/2021	19/02/2021	19/02/2021
			SDG Ref	210219-92	210219-92	210219-92	210219-92	210219-92	210219-92
			Lab Sample No.(s)	23759809	23759817	23759821	23759829	23759907	23759916
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		15	16	14	13	14	13
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	<12 M	<12 M	<12 M	<12 M	<12 M
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M	0.0115 M
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M	0.0116 M	<0.01 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M
Soil Organic Matter (SOM)	<0.35 %	TM132		2.93 #	3.59 #	1.76 #	2.64 #	21.2 #	18.3 #
pH	1 pH Units	TM133		9.55 M	9.6 M	9.13 M	9.05 M	11.7 M	11.6 M
Cyanide, Total	<1 mg/kg	TM153		<1 M	<1 M	<1 M	<1 M	<1 M	<1 M
Arsenic	<0.6 mg/kg	TM181		8.72 M	10.7 M	5.05 M	6.82 M	4.71 M	4.79 M
Cadmium	<0.02 mg/kg	TM181		0.255 M	1.52 M	0.317 M	0.58 M	<0.02 M	<0.02 M
Chromium	<0.9 mg/kg	TM181		50.9 M	73.4 M	45.2 M	110 M	281 M	461 M
Copper	<1.4 mg/kg	TM181		25.7 M	28.5 M	7.09 M	<14 M	14.4 M	27.9 M
Iron	<1000 mg/kg	TM181		83000 #	71200 #	21800 #	40300 #	108000 #	146000 #
Lead	<0.7 mg/kg	TM181		85.8 M	111 M	31.3 M	60.5 M	60.1 M	58.8 M
Manganese	<0.13 mg/kg	TM181		4600 M	6770 M	4910 M	5770 M	24200 M	20300 M
Mercury	<0.1 mg/kg	TM181		<1 M	<1 M	<0.1 M	<1 M	<0.1 M	<0.1 M
Nickel	<0.2 mg/kg	TM181		28.9 M	32.3 M	7.99 M	18.6 M	8.39 M	13.8 M
Selenium	<1 mg/kg	TM181		<10 #	<10 #	3.27 #	<10 #	11.8 #	4.66 #
Vanadium	<0.2 mg/kg	TM181		88.5 #	179 #	40.6 #	129 #	481 #	347 #
Zinc	<1.9 mg/kg	TM181		340 M	367 M	76.2 M	153 M	176 M	184 M

Validated

CERTIFICATE OF ANALYSIS

SDG:	210219-92	**Client Reference:**	P18-669	**Report Number:**	589611
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	589297

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	W203-1	W203-2	W203-3	W203-4	W205-1	W205-2
			Depth (m)	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	18/02/2021	18/02/2021	18/02/2021	18/02/2021	17/02/2021	17/02/2021
			Sample Time	.	.	.	.	.	.
			Date Received	19/02/2021	19/02/2021	19/02/2021	19/02/2021	19/02/2021	19/02/2021
			SDG Ref	210219-92	210219-92	210219-92	210219-92	210219-92	210219-92
			Lab Sample No.(s)	23759927	23759938	23759949	23759964	23759765	23759825
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		15	12	11	7.4	21	19
Exchangeable Ammonia as N	<12 mg/kg	TM024		16.1 M	<12 M	<12 M	<12 M	<12 M	<12 M
Phenol	<0.01 mg/kg	TM062 (S)		0.0236 M	<0.01 M	0.0224 M	0.0108 M	<0.01 M	0.0248 M
Cresols	<0.01 mg/kg	TM062 (S)		0.0118 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M
Soil Organic Matter (SOM)	<0.35 %	TM132		16.8 #	25 #	20.2 #	28.8 #	16.5 #	11.9 #
pH	1 pH Units	TM133		11.2 M	11.6 M	11.1 M	11.9 M	11 M	10.2 M
Cyanide, Total	<1 mg/kg	TM153		<1 M	<1 M	<1 M	<1 M	<1 M	<1 M
Arsenic	<0.6 mg/kg	TM181		<6 M	6.32 M	<6 M	4.53 M	11.5 M	9.17 M
Cadmium	<0.02 mg/kg	TM181		<0.2 M	<0.2 M	<0.2 M	<0.02 M	<0.2 M	<0.2 M
Chromium	<0.9 mg/kg	TM181		318 M	447 M	527 M	280 M	160 M	100 M
Copper	<1.4 mg/kg	TM181		30.4 M	56.2 M	17.7 M	47.5 M	32.8 M	23.9 M
Iron	<1000 mg/kg	TM181		113000 #	133000 #	133000 #	141000 #	175000 #	89700 #
Lead	<0.7 mg/kg	TM181		80.4 M	95.8 M	243 M	51.5 M	52 M	74.3 M
Manganese	<0.13 mg/kg	TM181		22100 M	25800 M	28600 M	15700 M	15600 M	8870 M
Mercury	<0.1 mg/kg	TM181		<1 M	<1 M	<1 M	<0.1 M	<1 M	<1 M
Nickel	<0.2 mg/kg	TM181		14.7 M	20.8 M	11.2 M	12.7 M	32 M	35.3 M
Selenium	<1 mg/kg	TM181		<10 #	16.4 #	14.8 #	4.2 #	<10 #	<10 #
Vanadium	<0.2 mg/kg	TM181		402 #	604 #	686 #	273 #	792 #	295 #
Zinc	<1.9 mg/kg	TM181		315 M	335 M	411 M	160 M	213 M	276 M
Asbestos Quantification - Gravimetric - %	<0.001 %	TM304		<0.001 #					
Asbestos Quantification - PCOM Evaluation - %	<0.001 %	TM304		<0.001 #					
Additional Asbestos Components (Using TM048)		TM304		None #					
Analysts Comments		TM304		0					
Asbestos Quantification - Total - %	<0.001 %	TM304		<0.001 #					

Validated

CERTIFICATE OF ANALYSIS

SDG:	210219-92	**Client Reference:**	P18-669	**Report Number:**	589611
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	589297

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	W205-3	W205-4	W205-5	W205-6	W205-7	W205-8
			Depth (m)	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	17/02/2021	17/02/2021	17/02/2021	17/02/2021	17/02/2021	17/02/2021
			Sample Time	.	.	.	.	.	.
			Date Received	19/02/2021	19/02/2021	19/02/2021	19/02/2021	19/02/2021	19/02/2021
			SDG Ref	210219-92	210219-92	210219-92	210219-92	210219-92	210219-92
			Lab Sample No.(s)	23759874	23759970	23759980	23759993	23760003	23760012
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		15	21	17	17	17	21
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	<12 M	<12 M	<12 M	<12 M	<12 M
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 M	0.0254 M	0.0121 M	0.0121 M	0.0242 M	0.0126 M
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M
Soil Organic Matter (SOM)	<0.35 %	TM132		9.09 #	7.09 #	12.8 #	10.8 #	15.3 #	6.98 #
pH	1 pH Units	TM133		10.2 M	10.3 M	11.4 M	10.3 M	11.1 M	10.5 M
Cyanide, Total	<1 mg/kg	TM153		<1 M	<1 M	<1 M	<1 M	<1 M	<1 M
Arsenic	<0.6 mg/kg	TM181		8.41 M	8.07 M	<6 M	7.25 M	9.32 M	8 M
Cadmium	<0.02 mg/kg	TM181		<0.2 M	<0.2 M	<0.2 M	<0.2 M	<0.2 M	<0.2 M
Chromium	<0.9 mg/kg	TM181		95.9 M	222 M	98.5 M	150 M	222 M	196 M
Copper	<1.4 mg/kg	TM181		18.6 M	24.9 M	20.7 M	26.7 M	26.2 M	22.4 M
Iron	<1000 mg/kg	TM181		87000 #	103000 #	126000 #	111000 #	108000 #	105000 #
Lead	<0.7 mg/kg	TM181		73.6 M	63.5 M	65.4 M	77.1 M	53.1 M	79.2 M
Manganese	<0.13 mg/kg	TM181		7640 M	11900 M	9580 M	13300 M	12100 M	15000 M
Mercury	<0.1 mg/kg	TM181		<1 M	<1 M	<1 M	<1 M	<1 M	<1 M
Nickel	<0.2 mg/kg	TM181		23.4 M	22.5 M	16.6 M	21.8 M	19.1 M	25.4 M
Selenium	<1 mg/kg	TM181		<10 #	<10 #	<10 #	<10 #	<10 #	<10 #
Vanadium	<0.2 mg/kg	TM181		174 #	269 #	384 #	330 #	334 #	377 #
Zinc	<1.9 mg/kg	TM181		191 M	213 M	140 M	203 M	175 M	268 M

Validated

CERTIFICATE OF ANALYSIS

SDG:	210219-92	**Client Reference:**	P18-669	**Report Number:**	589611
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	589297

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	W214-1	W214-2	W214-3	W214-4	W214-5	W214-6
			Depth (m)	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	17/02/2021	17/02/2021	17/02/2021	17/02/2021	17/02/2021	17/02/2021
			Sample Time	.	.	.	.	.	.
			Date Received	19/02/2021	19/02/2021	19/02/2021	19/02/2021	19/02/2021	19/02/2021
			SDG Ref	210219-92	210219-92	210219-92	210219-92	210219-92	210219-92
			Lab Sample No.(s)	23760027	23759769	23759774	23759780	23759784	23759789
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		13	15	14	15	6.8	14
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	<12 M	<12 M	<12 M	<12 M	<12 M
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M
Soil Organic Matter (SOM)	<0.35 %	TM132		5.02 #	8.57 #	12.2 #	7.98 #	5.98 #	6.83 #
pH	1 pH Units	TM133		9.92 M	10.9 M	9.86 M	9.52 M	10.9 M	10.2 M
Cyanide, Total	<1 mg/kg	TM153		4.25 M	<1 M	<1 M	1.95 M	<1 M	<1 M
Arsenic	<0.6 mg/kg	TM181		14.3 M	9.28 M	12.6 M	13.7 M	4.5 M	9.5 M
Cadmium	<0.02 mg/kg	TM181		0.629 M	0.386 M	0.255 M	0.438 M	<0.02 M	0.384 M
Chromium	<0.9 mg/kg	TM181		85.7 M	27.5 M	56.2 M	64 M	17.4 M	134 M
Copper	<1.4 mg/kg	TM181		32.9 M	14.9 M	21.1 M	37 M	14.5 M	26.7 M
Iron	<1000 mg/kg	TM181		58800 #	36800 #	76100 #	81200 #	38400 #	94200 #
Lead	<0.7 mg/kg	TM181		116 M	50.4 M	98.8 M	136 M	20.6 M	91.2 M
Manganese	<0.13 mg/kg	TM181		6000 M	2450 M	7810 M	6250 M	694 M	12300 M
Mercury	<0.1 mg/kg	TM181		<1 M	<1 M	<1 M	<1 M	<0.1 M	<1 M
Nickel	<0.2 mg/kg	TM181		17.8 M	15.5 M	21.5 M	27.9 M	82.7 M	26.4 M
Selenium	<1 mg/kg	TM181		<10 #	<10 #	<10 #	<10 #	<1 #	<10 #
Vanadium	<0.2 mg/kg	TM181		117 #	56.2 #	144 #	125 #	56.8 #	204 #
Zinc	<1.9 mg/kg	TM181		530 M	160 M	375 M	620 M	63.8 M	333 M
Asbestos Quantification - Gravimetric - %	<0.001 %	TM304		<0.001 #		0.0303 #			
Asbestos Quantification - PCOM Evaluation - %	<0.001 %	TM304		<0.001 #		<0.001 #			
Additional Asbestos Components (Using TM048)		TM304		None #		None #			
Analysts Comments		TM304		0		N/A			
Asbestos Quantification - Total - %	<0.001 %	TM304		<0.001 #		0.0303 #			

CERTIFICATE OF ANALYSIS

SDG:	210219-92	**Client Reference:**	P18-669	**Report Number:**	589611
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	589297

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	W172B-1	W172B-2
			Depth (m)	0.20 - 0.20	0.20 - 0.20
			Sample Type	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	18/02/2021	18/02/2021
			Sample Time	.	.
			Date Received	19/02/2021	19/02/2021
			SDG Ref	210219-92	210219-92
			Lab Sample No.(s)	23759884	23759897
			AGS Reference		
Moisture Content Ratio (% of as received sample)	%	PM024		15	13
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	<12 M
Phenol	<0.01 mg/kg	TM062 (S)		<0.1 M	<0.01 M
Cresols	<0.01 mg/kg	TM062 (S)		0.117 M	0.0805 M
Xylenols	<0.015 mg/kg	TM062 (S)		0.187 M	0.0575 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.35 M	0.138 M
Soil Organic Matter (SOM)	<0.35 %	TM132		14 #	13.6 #
pH	1 pH Units	TM133		9.66 M	9.53 M
Cyanide, Total	<1 mg/kg	TM153		2.01 M	2.07 M
Arsenic	<0.6 mg/kg	TM181		10.8 M	15.1 M
Cadmium	<0.02 mg/kg	TM181		4.29 M	3.32 M
Chromium	<0.9 mg/kg	TM181		93.1 M	81 M
Copper	<1.4 mg/kg	TM181		46 M	34.4 M
Iron	<1000 mg/kg	TM181		314000 #	340000 #
Lead	<0.7 mg/kg	TM181		1180 M	951 M
Manganese	<0.13 mg/kg	TM181		9990 M	16000 M
Mercury	<0.1 mg/kg	TM181		<1 M	<1 M
Nickel	<0.2 mg/kg	TM181		39.6 M	37.2 M
Selenium	<1 mg/kg	TM181		<10 #	<10 #
Vanadium	<0.2 mg/kg	TM181		325 #	309 #
Zinc	<1.9 mg/kg	TM181		2950 M	2230 M

Validated

CERTIFICATE OF ANALYSIS

SDG:	210219-92	**Client Reference:**	P18-669	**Report Number:**	589611
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	589297

PAH by GCMS

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	W34-1	W34-2	W34-3	W34-4	W34-5	W34-6
			Depth (m)	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	18/02/2021	18/02/2021	18/02/2021	18/02/2021	18/02/2021	18/02/2021
			Sample Time	.	.	.	.	.	.
			Date Received	19/02/2021	19/02/2021	19/02/2021	19/02/2021	19/02/2021	19/02/2021
			SDG Ref	210219-92	210219-92	210219-92	210219-92	210219-92	210219-92
			Lab Sample No.(s)	23759843	23759847	23759851	23759855	23759860	23759865
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		92.8	91.9	94.6	97.1	96.5	84.9
Acenaphthene-d10 % recovery**	%	TM218		93.9	90.4	94.6	94.8	93.9	84.8
Phenanthrene-d10 % recovery**	%	TM218		97.2	92.7	99.1	97.4	93.4	86.2
Chrysene-d12 % recovery**	%	TM218		78.1	78.3	93.1	82.2	78.9	71.1
Perylene-d12 % recovery**	%	TM218		74.2	75.7	89.9	79.2	76	70.8
Naphthalene	<9 µg/kg	TM218		60.9 M	110 M	29.6 M	94.3 M	110 M	98.4 M
Acenaphthylene	<12 µg/kg	TM218		37.7 M	693 M	91.8 M	96.5 M	46.1 M	313 M
Acenaphthene	<8 µg/kg	TM218		18.9 M	25.5 M	15.1 M	28.8 M	18.3 M	22.8 M
Fluorene	<10 µg/kg	TM218		14.7 M	53.9 M	13.5 M	55.5 M	17.2 M	34.7 M
Phenanthrene	<15 µg/kg	TM218		127 M	437 M	180 M	498 M	139 M	338 M
Anthracene	<16 µg/kg	TM218		39.2 M	348 M	57.9 M	138 M	38.1 M	154 M
Fluoranthene	<17 µg/kg	TM218		255 M	2490 M	580 M	1070 M	286 M	1240 M
Pyrene	<15 µg/kg	TM218		238 M	2280 M	581 M	946 M	253 M	1150 M
Benz(a)anthracene	<14 µg/kg	TM218		151 M	1410 M	340 M	551 M	173 M	642 M
Chrysene	<10 µg/kg	TM218		184 M	1440 M	438 M	580 M	207 M	703 M
Benzo(b)fluoranthene	<15 µg/kg	TM218		316 M	2860 M	683 M	964 M	369 M	1340 M
Benzo(k)fluoranthene	<14 µg/kg	TM218		98.9 M	897 M	230 M	279 M	86.4 M	390 M
Benzo(a)pyrene	<15 µg/kg	TM218		172 M	1800 M	399 M	541 M	184 M	807 M
Indeno(1,2,3-cd)pyrene	<18 µg/kg	TM218		161 M	1810 M	368 M	473 M	175 M	829 M
Dibenzo(a,h)anthracene	<23 µg/kg	TM218		<23 M	100 M	64.9 M	<46 M	<23 M	38.3 M
Benzo(g,h,i)perylene	<24 µg/kg	TM218		161 M	1820 M	355 M	442 M	185 M	794 M
PAH, Total Detected USEPA 16	<118 µg/kg	TM218		2040	18600	4430	6760	2290	8890

Validated

CERTIFICATE OF ANALYSIS

SDG:	210219-92	**Client Reference:**	P18-669	**Report Number:**	589611
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	589297

PAH by GCMS

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	W34-7	W34-8	W172-1	W172-2	W194-1	W194-2
			Depth (m)	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	18/02/2021	18/02/2021	18/02/2021	18/02/2021	18/02/2021	18/02/2021
			Sample Time	.	.	.	.	.	.
			Date Received	19/02/2021	19/02/2021	19/02/2021	19/02/2021	19/02/2021	19/02/2021
			SDG Ref	210219-92	210219-92	210219-92	210219-92	210219-92	210219-92
			Lab Sample No.(s)	23759870	23759878	23759833	23759839	23759793	23759797
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		96.4	101	98.9	94.9	97.4	95
Acenaphthene-d10 % recovery**	%	TM218		95.7	102	97.1	90.5	95.3	94.6
Phenanthrene-d10 % recovery**	%	TM218		94.8	100	101	89.2	98.5	98.6
Chrysene-d12 % recovery**	%	TM218		88.5	87.2	91.5	84.9	93.2	85.5
Perylene-d12 % recovery**	%	TM218		88	85.8	88.6	85.6	92.9	85
Naphthalene	<9 µg/kg	TM218		43 M	206 M	57.3 M	82.6 M	61.7 M	89.7 M
Acenaphthylene	<12 µg/kg	TM218		88.6 M	139 M	27 M	28.1 M	40.5 M	42 M
Acenaphthene	<8 µg/kg	TM218		25 M	32.6 M	<8 M	12.1 M	140 M	76.7 M
Fluorene	<10 µg/kg	TM218		16.9 M	72.2 M	19.4 M	25.1 M	147 M	102 M
Phenanthrene	<15 µg/kg	TM218		225 M	651 M	185 M	226 M	787 M	603 M
Anthracene	<16 µg/kg	TM218		<16 M	182 M	46.2 M	61.4 M	237 M	172 M
Fluoranthene	<17 µg/kg	TM218		667 M	1260 M	371 M	421 M	1450 M	1260 M
Pyrene	<15 µg/kg	TM218		653 M	1070 M	287 M	332 M	1080 M	949 M
Benz(a)anthracene	<14 µg/kg	TM218		395 M	732 M	156 M	191 M	754 M	571 M
Chrysene	<10 µg/kg	TM218		478 M	722 M	171 M	182 M	768 M	577 M
Benzo(b)fluoranthene	<15 µg/kg	TM218		755 M	1220 M	244 M	269 M	1030 M	814 M
Benzo(k)fluoranthene	<14 µg/kg	TM218		255 M	402 M	67.6 M	82.2 M	327 M	257 M
Benzo(a)pyrene	<15 µg/kg	TM218		425 M	802 M	122 M	150 M	562 M	447 M
Indeno(1,2,3-cd)pyrene	<18 µg/kg	TM218		450 M	690 M	98.7 M	138 M	350 M	325 M
Dibenzo(a,h)anthracene	<23 µg/kg	TM218		63.6 M	129 M	<23 M	28.1 M	102 M	<23 M
Benzo(g,h,i)perylene	<24 µg/kg	TM218		440 M	666 M	96.5 M	113 M	337 M	297 M
PAH, Total Detected USEPA 16	<118 µg/kg	TM218		4980	8980	1950	2340	8170	6580

Validated

CERTIFICATE OF ANALYSIS

SDG:	210219-92	**Client Reference:**	P18-669	**Report Number:**	589611
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	589297

PAH by GCMS

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	W195-1	W195-2	W196-1	W196-2	W202-1	W202-2
			Depth (m)	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	18/02/2021	18/02/2021	18/02/2021	18/02/2021	18/02/2021	18/02/2021
			Sample Time	.	.	.	.	.	.
			Date Received	19/02/2021	19/02/2021	19/02/2021	19/02/2021	19/02/2021	19/02/2021
			SDG Ref	210219-92	210219-92	210219-92	210219-92	210219-92	210219-92
			Lab Sample No.(s)	23759809	23759817	23759821	23759829	23759907	23759916
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		95	99	94.6	92.6	94.3	90.4
Acenaphthene-d10 % recovery**	%	TM218		92.7	95.6	96.3	91.8	92.6	90.5
Phenanthrene-d10 % recovery**	%	TM218		94.5	98.5	101	93.9	94.2	90.9
Chrysene-d12 % recovery**	%	TM218		85.9	94.6	84.8	82.4	84.6	78.7
Perylene-d12 % recovery**	%	TM218		84.8	88.8	82.7	78.4	80	70.3
Naphthalene	<9 µg/kg	TM218		153 M	196 M	22.2 M	16.1 M	2370 M	3150 M
Acenaphthylene	<12 µg/kg	TM218		94.2 M	97.2 M	18.6 M	14.5 M	565 M	1420 M
Acenaphthene	<8 µg/kg	TM218		16.3 M	703 M	<8 M	<8 M	112 M	116 M
Fluorene	<10 µg/kg	TM218		62.8 M	448 M	<10 M	<10 M	439 M	766 M
Phenanthrene	<15 µg/kg	TM218		535 M	566 M	64.1 M	64.7 M	4220 M	9440 M
Anthracene	<16 µg/kg	TM218		150 M	114 M	23 M	20.4 M	1030 M	4830 M
Fluoranthene	<17 µg/kg	TM218		934 M	660 M	112 M	119 M	5820 M	19600 M
Pyrene	<15 µg/kg	TM218		714 M	485 M	89.3 M	94.1 M	4280 M	13000 M
Benz(a)anthracene	<14 µg/kg	TM218		380 M	311 M	61.5 M	60.2 M	2290 M	6930 M
Chrysene	<10 µg/kg	TM218		384 M	321 M	54.2 M	63.5 M	2250 M	6110 M
Benzo(b)fluoranthene	<15 µg/kg	TM218		564 M	483 M	101 M	96.3 M	3070 M	7160 M
Benzo(k)fluoranthene	<14 µg/kg	TM218		170 M	146 M	36.7 M	31 M	1060 M	2500 M
Benzo(a)pyrene	<15 µg/kg	TM218		331 M	270 M	54.4 M	56.5 M	1940 M	4590 M
Indeno(1,2,3-cd)pyrene	<18 µg/kg	TM218		283 M	201 M	51.9 M	55.6 M	1400 M	3830 M
Dibenzo(a,h)anthracene	<23 µg/kg	TM218		63.6 M	42.2 M	<23 M	<23 M	313 M	772 M
Benzo(g,h,i)perylene	<24 µg/kg	TM218		233 M	210 M	53.7 M	51.7 M	1170 M	2680 M
PAH, Total Detected USEPA 16	<118 µg/kg	TM218		5070	5250	743	743	32300	87000

Validated

CERTIFICATE OF ANALYSIS

SDG:	210219-92	**Client Reference:**	P18-669	**Report Number:**	589611
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	589297

PAH by GCMS

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	W203-1	W203-2	W203-3	W203-4	W205-1	W205-2
			Depth (m)	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	18/02/2021	18/02/2021	18/02/2021	18/02/2021	17/02/2021	17/02/2021
			Sample Time	.	.	.	.	.	.
			Date Received	19/02/2021	19/02/2021	19/02/2021	19/02/2021	19/02/2021	19/02/2021
			SDG Ref	210219-92	210219-92	210219-92	210219-92	210219-92	210219-92
			Lab Sample No.(s)	23759927	23759938	23759949	23759964	23759765	23759825
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		91	95.2	96.4	92.6	92.4	88.7
Acenaphthene-d10 % recovery**	%	TM218		89.1	93.7	92.8	93.4	92.8	86.4
Phenanthrene-d10 % recovery**	%	TM218		89.6	96.2	92.4	93.2	90.3	85.6
Chrysene-d12 % recovery**	%	TM218		80.3	85.3	80.6	90.3	76.2	83.6
Perylene-d12 % recovery**	%	TM218		72.7	79.2	76.6	85.1	72.6	82.1
Naphthalene	<9 µg/kg	TM218		4030 M	2880 M	2160 M	3550 M	993 M	1980 M
Acenaphthylene	<12 µg/kg	TM218		811 M	798 M	512 M	847 M	410 M	835 M
Acenaphthene	<8 µg/kg	TM218		133 M	123 M	79.2 M	121 M	118 M	131 M
Fluorene	<10 µg/kg	TM218		650 M	735 M	385 M	576 M	346 M	760 M
Phenanthrene	<15 µg/kg	TM218		4540 M	4710 M	2740 M	4600 M	2350 M	4990 M
Anthracene	<16 µg/kg	TM218		1090 M	1340 M	804 M	1340 M	666 M	1310 M
Fluoranthene	<17 µg/kg	TM218		6130 M	6490 M	4050 M	7110 M	4510 M	8600 M
Pyrene	<15 µg/kg	TM218		4960 M	4880 M	3080 M	5350 M	3440 M	6080 M
Benz(a)anthracene	<14 µg/kg	TM218		2800 M	2680 M	1640 M	3330 M	1470 M	2890 M
Chrysene	<10 µg/kg	TM218		2690 M	2620 M	1660 M	3020 M	1340 M	2480 M
Benzo(b)fluoranthene	<15 µg/kg	TM218		3430 M	3330 M	2250 M	4350 M	2040 M	3600 M
Benzo(k)fluoranthene	<14 µg/kg	TM218		1070 M	1110 M	728 M	1420 M	596 M	1230 M
Benzo(a)pyrene	<15 µg/kg	TM218		2070 M	2070 M	1410 M	2640 M	1200 M	2200 M
Indeno(1,2,3-cd)pyrene	<18 µg/kg	TM218		1560 M	1600 M	1040 M	2270 M	1110 M	1940 M
Dibenzo(a,h)anthracene	<23 µg/kg	TM218		371 M	376 M	61.2 M	480 M	<230 M	339 M
Benzo(g,h,i)perylene	<24 µg/kg	TM218		1380 M	1290 M	949 M	1730 M	872 M	1440 M
PAH, Total Detected USEPA 16	<118 µg/kg	TM218		37700	37000	23500	42700	21500	40800

Validated

CERTIFICATE OF ANALYSIS

SDG:	210219-92	**Client Reference:**	P18-669	**Report Number:**	589611
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	589297

PAH by GCMS

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	W205-3	W205-4	W205-5	W205-6	W205-7	W205-8
			Depth (m)	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	17/02/2021	17/02/2021	17/02/2021	17/02/2021	17/02/2021	17/02/2021
			Sample Time	.	.	.	.	.	.
			Date Received	19/02/2021	19/02/2021	19/02/2021	19/02/2021	19/02/2021	19/02/2021
			SDG Ref	210219-92	210219-92	210219-92	210219-92	210219-92	210219-92
			Lab Sample No.(s)	23759874	23759970	23759980	23759993	23760003	23760012
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		94.7	94.7	93.6	94.9	95.1	90.1
Acenaphthene-d10 % recovery**	%	TM218		94.9	95.4	91.4	93.1	93.1	90.3
Phenanthrene-d10 % recovery**	%	TM218		97.2	97.7	93.2	94.2	91.6	93
Chrysene-d12 % recovery**	%	TM218		86.6	82.7	83.8	83.3	90	84.3
Perylene-d12 % recovery**	%	TM218		82	81.9	80.8	82.4	90.1	82.6
Naphthalene	<9 µg/kg	TM218		540 M	528 M	1120 M	3610 M	682 M	534 M
Acenaphthylene	<12 µg/kg	TM218		276 M	183 M	514 M	2500 M	364 M	211 M
Acenaphthene	<8 µg/kg	TM218		39.7 M	36 M	110 M	199 M	55.7 M	56.4 M
Fluorene	<10 µg/kg	TM218		226 M	151 M	357 M	2870 M	299 M	188 M
Phenanthrene	<15 µg/kg	TM218		1460 M	1110 M	2040 M	17700 M	2040 M	1170 M
Anthracene	<16 µg/kg	TM218		392 M	302 M	532 M	3050 M	562 M	333 M
Fluoranthene	<17 µg/kg	TM218		2350 M	1840 M	3540 M	18200 M	3720 M	2210 M
Pyrene	<15 µg/kg	TM218		1720 M	1340 M	2590 M	12700 M	2700 M	1600 M
Benz(a)anthracene	<14 µg/kg	TM218		868 M	610 M	1230 M	5060 M	1420 M	788 M
Chrysene	<10 µg/kg	TM218		853 M	566 M	1070 M	4690 M	1200 M	735 M
Benzo(b)fluoranthene	<15 µg/kg	TM218		1210 M	872 M	1590 M	6630 M	1910 M	1100 M
Benzo(k)fluoranthene	<14 µg/kg	TM218		421 M	288 M	511 M	1900 M	568 M	350 M
Benzo(a)pyrene	<15 µg/kg	TM218		709 M	491 M	992 M	3810 M	1130 M	624 M
Indeno(1,2,3-cd)pyrene	<18 µg/kg	TM218		559 M	374 M	861 M	3120 M	998 M	467 M
Dibenzo(a,h)anthracene	<23 µg/kg	TM218		136 M	<23 M	155 M	138 M	187 M	39 M
Benzo(g,h,i)perylene	<24 µg/kg	TM218		470 M	377 M	690 M	2910 M	759 M	433 M
PAH, Total Detected USEPA 16	<118 µg/kg	TM218		12200	9070	17900	89000	18600	10800

Validated

CERTIFICATE OF ANALYSIS

SDG:	210219-92	**Client Reference:**	P18-669	**Report Number:**	589611
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	589297

PAH by GCMS

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	W214-1	W214-2	W214-3	W214-4	W214-5	W214-6
			Depth (m)	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	17/02/2021	17/02/2021	17/02/2021	17/02/2021	17/02/2021	17/02/2021
			Sample Time	.	.	.	.	.	.
			Date Received	19/02/2021	19/02/2021	19/02/2021	19/02/2021	19/02/2021	19/02/2021
			SDG Ref	210219-92	210219-92	210219-92	210219-92	210219-92	210219-92
			Lab Sample No.(s)	23760027	23759769	23759774	23759780	23759784	23759789
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		93.9	96.6	98.3	96.1	92.1	95.2
Acenaphthene-d10 % recovery**	%	TM218		90	94.5	94.5	96.3	94.1	94.9
Phenanthrene-d10 % recovery**	%	TM218		91.3	99	92	97.7	97.4	99.8
Chrysene-d12 % recovery**	%	TM218		85.5	87.3	83.8	85.5	91.3	95.5
Perylene-d12 % recovery**	%	TM218		85	81.8	86.6	83	84	87.4
Naphthalene	<9 µg/kg	TM218		61.9 M	189 M	70.7 M	37.1 M	163 M	113 M
Acenaphthylene	<12 µg/kg	TM218		28.7 M	255 M	64.5 M	14.5 M	240 M	96.6 M
Acenaphthene	<8 µg/kg	TM218		<8 M	65.1 M	12.6 M	<8 M	460 M	18.7 M
Fluorene	<10 µg/kg	TM218		16.5 M	165 M	52.4 M	<10 M	216 M	54.8 M
Phenanthrene	<15 µg/kg	TM218		148 M	1650 M	311 M	78.9 M	2180 M	447 M
Anthracene	<16 µg/kg	TM218		57.3 M	530 M	144 M	19.9 M	1020 M	175 M
Fluoranthene	<17 µg/kg	TM218		334 M	4490 M	578 M	173 M	8580 M	1090 M
Pyrene	<15 µg/kg	TM218		263 M	4570 M	495 M	140 M	7480 M	1040 M
Benz(a)anthracene	<14 µg/kg	TM218		154 M	2190 M	277 M	76.9 M	3090 M	573 M
Chrysene	<10 µg/kg	TM218		152 M	2200 M	265 M	88.5 M	3080 M	591 M
Benzo(b)fluoranthene	<15 µg/kg	TM218		212 M	2930 M	480 M	121 M	3980 M	895 M
Benzo(k)fluoranthene	<14 µg/kg	TM218		68.2 M	942 M	130 M	45.1 M	1250 M	252 M
Benzo(a)pyrene	<15 µg/kg	TM218		140 M	1640 M	255 M	71.5 M	2550 M	502 M
Indeno(1,2,3-cd)pyrene	<18 µg/kg	TM218		130 M	1150 M	195 M	63.6 M	1640 M	385 M
Dibenzo(a,h)anthracene	<23 µg/kg	TM218		<23 M	264 M	<23 M	<23 M	298 M	78.3 M
Benzo(g,h,i)perylene	<24 µg/kg	TM218		111 M	1180 M	184 M	57.9 M	1590 M	409 M
PAH, Total Detected USEPA 16	<118 µg/kg	TM218		1880	24400	3520	988	37800	6720

Validated

CERTIFICATE OF ANALYSIS

SDG:	210219-92	**Client Reference:**	P18-669	**Report Number:**	589611
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	589297

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	W172B-1	W172B-2				
			Depth (m)	0.20 - 0.20	0.20 - 0.20				
			Sample Type	Soil/Solid (S)	Soil/Solid (S)				
			Date Sampled	18/02/2021	18/02/2021				
			Sample Time	.	.				
			Date Received	19/02/2021	19/02/2021				
			SDG Ref	210219-92	210219-92				
			Lab Sample No.(s)	23759884	23759897				
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		87.5	83.9				
Acenaphthene-d10 % recovery**	%	TM218		88	87.3				
Phenanthrene-d10 % recovery**	%	TM218		92	84.9				
Chrysene-d12 % recovery**	%	TM218		80.5	70.3				
Perylene-d12 % recovery**	%	TM218		73.5	72.6				
Naphthalene	<9 µg/kg	TM218		17000 M	17700 M				
Acenaphthylene	<12 µg/kg	TM218		63600 M	59900 M				
Acenaphthene	<8 µg/kg	TM218		4130 M	4960 M				
Fluorene	<10 µg/kg	TM218		66100 M	61200 M				
Phenanthrene	<15 µg/kg	TM218		210000 M	167000 M				
Anthracene	<16 µg/kg	TM218		74000 M	68700 M				
Fluoranthene	<17 µg/kg	TM218		198000 M	158000 M				
Pyrene	<15 µg/kg	TM218		115000 M	103000 M				
Benz(a)anthracene	<14 µg/kg	TM218		55200 M	57700 M				
Chrysene	<10 µg/kg	TM218		49100 M	53000 M				
Benzo(b)fluoranthene	<15 µg/kg	TM218		52600 M	61800 M				
Benzo(k)fluoranthene	<14 µg/kg	TM218		19100 M	18800 M				
Benzo(a)pyrene	<15 µg/kg	TM218		33400 M	36400 M				
Indeno(1,2,3-cd)pyrene	<18 µg/kg	TM218		28500 M	24800 M				
Dibenzo(a,h)anthracene	<23 µg/kg	TM218		5900 M	1560 M				
Benzo(g,h,i)perylene	<24 µg/kg	TM218		18700 M	19300 M				
PAH, Total Detected USEPA 16	<118 µg/kg	TM218		1010000	913000				

Validated

CERTIFICATE OF ANALYSIS

SDG:	210219-92	**Client Reference:**	P18-669	**Report Number:**	589611
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	589297

TPH CWG (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	W34-1	W34-2	W34-3	W34-4	W34-5	W34-6
			Depth (m)	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	18/02/2021	18/02/2021	18/02/2021	18/02/2021	18/02/2021	18/02/2021
			Sample Time	.	.	.	.	.	.
			Date Received	19/02/2021	19/02/2021	19/02/2021	19/02/2021	19/02/2021	19/02/2021
			SDG Ref	210219-92	210219-92	210219-92	210219-92	210219-92	210219-92
			Lab Sample No.(s)	23759843	23759847	23759851	23759855	23759860	23759865
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		95	92.5	93.5	77.3	91	129
Aliphatics >C5-C6	<10 µg/kg	TM089		<10	<10	<10	<10	<10	<10
Aliphatics >C6-C8	<10 µg/kg	TM089		<10	<10	<10	<10	<10	<10
Aliphatics >C8-C10	<10 µg/kg	TM089		<10	<10	<10	<10	<10	<10
Aliphatics >C10-C12	<1000 µg/kg	TM414		<1000	<1000	<1000	<1000	<1000	<1000
Aliphatics >C12-C16	<1000 µg/kg	TM414		1790	1970	1290	4380	<1000	5850
Aliphatics >C16-C21	<1000 µg/kg	TM414		10500	8060	8470	25600	5310	26900
Aliphatics >C21-C35	<1000 µg/kg	TM414		11400	17400	46200	42500	15600	47200
Aliphatics >C35-C44	<1000 µg/kg	TM414		<1000	1240	7160	11900	2240	14500
Total Aliphatics >C10-C44	<5000 µg/kg	TM414		23900	28700	63100	84300	23400	94700
Total Aliphatics & Aromatics >C10-C44	<10000 µg/kg	TM414		80000	117000	79600	137000	44900	149000
Aromatics >EC5-EC7	<10 µg/kg	TM089		<10	<10	<10	<10	<10	<10
Aromatics >EC7-EC8	<10 µg/kg	TM089		<10	<10	<10	<10	<10	<10
Aromatics >EC8-EC10	<10 µg/kg	TM089		<10	<10	<10	<10	<10	<10
Aromatics > EC10-EC12	<1000 µg/kg	TM414		<1000	<1000	<1000	<1000	<1000	<1000
Aromatics > EC12-EC16	<1000 µg/kg	TM414		<1000	<1000	<1000	1170	<1000	1490
Aromatics > EC16-EC21	<1000 µg/kg	TM414		<1000	9740	1580	6580	1060	3780
Aromatics > EC21-EC35	<1000 µg/kg	TM414		32700	66500	13700	43200	16000	42700
Aromatics >EC35-EC44	<1000 µg/kg	TM414		22100	11000	1090	2060	4290	5780
Aromatics > EC40-EC44	<1000 µg/kg	TM414		5690	1690	<1000	<1000	<1000	2380
Total Aromatics > EC10-EC44	<5000 µg/kg	TM414		56100	88200	16500	53000	21500	53800
Total Aliphatics & Aromatics >C5-C44	<10000 µg/kg	TM414		80000	117000	79600	137000	44900	149000
Total Aliphatics >C5-C10	<50 µg/kg	TM089		<50	<50	<50	<50	<50	<50
Total Aromatics >EC5-EC10	<50 µg/kg	TM089		<50	<50	<50	<50	<50	<50
GRO >C5-C10	<20 µg/kg	TM089		<20	<20	<20	<20	<20	<20

CERTIFICATE OF ANALYSIS

SDG:	210219-92	**Client Reference:**	P18-669	**Report Number:**	589611
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	589297

TPH CWG (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	W34-7	W34-8	W172-1	W172-2	W194-1	W194-2
			Depth (m)	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	18/02/2021	18/02/2021	18/02/2021	18/02/2021	18/02/2021	18/02/2021
			Sample Time	.	.	.	.	.	.
			Date Received	19/02/2021	19/02/2021	19/02/2021	19/02/2021	19/02/2021	19/02/2021
			SDG Ref	210219-92	210219-92	210219-92	210219-92	210219-92	210219-92
			Lab Sample No.(s)	23759870	23759878	23759833	23759839	23759793	23759797
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		108	71.5	114	90.7	112	93
Aliphatics >C5-C6	<10 µg/kg	TM089		<10	<10	<10	<10	<10	<10
Aliphatics >C6-C8	<10 µg/kg	TM089		<10	<10	<10	<10	22.6	10.2
Aliphatics >C8-C10	<10 µg/kg	TM089		<10	<10	12.7	<10	32.1	12.7
Aliphatics >C10-C12	<1000 µg/kg	TM414		<1000	<1000	<1000	<1000	<1000	<1000
Aliphatics >C12-C16	<1000 µg/kg	TM414		1050	11900	<1000	<1000	<1000	<1000
Aliphatics >C16-C21	<1000 µg/kg	TM414		7520	41100	<1000	<1000	<1000	<1000
Aliphatics >C21-C35	<1000 µg/kg	TM414		41500	71500	5230	11200	4770	4000
Aliphatics >C35-C44	<1000 µg/kg	TM414		7820	23200	<1000	7020	<1000	<1000
Total Aliphatics >C10-C44	<5000 µg/kg	TM414		57900	148000	5320	19100	5500	<5000
Total Aliphatics & Aromatics >C10-C44	<10000 µg/kg	TM414		77100	203000	<10000	29900	18400	16300
Aromatics >EC5-EC7	<10 µg/kg	TM089		<10	<10	<10	<10	<10	<10
Aromatics >EC7-EC8	<10 µg/kg	TM089		<10	<10	<10	<10	<10	<10
Aromatics >EC8-EC10	<10 µg/kg	TM089		<10	<10	<10	<10	21.4	<10
Aromatics > EC10-EC12	<1000 µg/kg	TM414		<1000	<1000	<1000	<1000	<1000	<1000
Aromatics > EC12-EC16	<1000 µg/kg	TM414		<1000	1630	<1000	<1000	<1000	<1000
Aromatics > EC16-EC21	<1000 µg/kg	TM414		2250	6370	<1000	1170	2620	3040
Aromatics > EC21-EC35	<1000 µg/kg	TM414		15300	43300	1390	7280	9280	8200
Aromatics >EC35-EC44	<1000 µg/kg	TM414		1560	3970	<1000	2300	<1000	<1000
Aromatics > EC40-EC44	<1000 µg/kg	TM414		<1000	1370	<1000	1050	<1000	<1000
Total Aromatics > EC10-EC44	<5000 µg/kg	TM414		19200	55400	<5000	10800	12900	12200
Total Aliphatics & Aromatics >C5-C44	<10000 µg/kg	TM414		77100	203000	<10000	29900	18500	12200
Total Aliphatics >C5-C10	<50 µg/kg	TM089		<50	<50	<50	<50	54.7	<50
Total Aromatics >EC5-EC10	<50 µg/kg	TM089		<50	<50	<50	<50	<50	<50
GRO >C5-C10	<20 µg/kg	TM089		<20	<20	<20	<20	54.7	<20

Validated

CERTIFICATE OF ANALYSIS

SDG:	210219-92	**Client Reference:**	P18-669	**Report Number:**	589611
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	589297

TPH CWG (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	W195-1	W195-2	W196-1	W196-2	W202-1	W202-2
			Depth (m)	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	18/02/2021	18/02/2021	18/02/2021	18/02/2021	18/02/2021	18/02/2021
			Sample Time	.	.	.	.	.	.
			Date Received	19/02/2021	19/02/2021	19/02/2021	19/02/2021	19/02/2021	19/02/2021
			SDG Ref	210219-92	210219-92	210219-92	210219-92	210219-92	210219-92
			Lab Sample No.(s)	23759809	23759817	23759821	23759829	23759907	23759916
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		97.9	71.1	95.7	97.5	33 4	33 4
Aliphatics >C5-C6	<10 µg/kg	TM089		<10	<10	<10	<10	<10 4	<10 4
Aliphatics >C6-C8	<10 µg/kg	TM089		31.9	<10	<10	20.5	51 4	32.2 4
Aliphatics >C8-C10	<10 µg/kg	TM089		63.7	<10	<10	53.6	31.3 4	29.9 4
Aliphatics >C10-C12	<1000 µg/kg	TM414		<1000	<1000	<1000	<1000	<1000	<1000
Aliphatics >C12-C16	<1000 µg/kg	TM414		<1000	<1000	<1000	<1000	3660	2500
Aliphatics >C16-C21	<1000 µg/kg	TM414		1390	<1000	<1000	<1000	18500	16200
Aliphatics >C21-C35	<1000 µg/kg	TM414		15400	5720	5620	10500	43700	44000
Aliphatics >C35-C44	<1000 µg/kg	TM414		4180	1250	<1000	2310	11800	6610
Total Aliphatics >C10-C44	<5000 µg/kg	TM414		20900	7040	5680	13500	78200	69600
Total Aliphatics & Aromatics >C10-C44	<10000 µg/kg	TM414		77100	16200	12600	33800	193000	150000
Aromatics >EC5-EC7	<10 µg/kg	TM089		<10	<10	<10	<10	<10 4	<10 4
Aromatics >EC7-EC8	<10 µg/kg	TM089		<10	<10	<10	<10	<10 4	10.4 4
Aromatics >EC8-EC10	<10 µg/kg	TM089		42.5	<10	<10	36.5	20.9 4	20.7 4
Aromatics > EC10-EC12	<1000 µg/kg	TM414		<1000	<1000	<1000	<1000	3070	2850
Aromatics > EC12-EC16	<1000 µg/kg	TM414		<1000	<1000	<1000	<1000	4590	3830
Aromatics > EC16-EC21	<1000 µg/kg	TM414		18300	1390	<1000	<1000	29000	21200
Aromatics > EC21-EC35	<1000 µg/kg	TM414		34600	6740	5640	16000	72000	47800
Aromatics >EC35-EC44	<1000 µg/kg	TM414		2350	<1000	<1000	3110	6360	4440
Aromatics > EC40-EC44	<1000 µg/kg	TM414		<1000	<1000	<1000	<1000	<1000	<1000
Total Aromatics > EC10-EC44	<5000 µg/kg	TM414		56200	9120	6880	20300	115000	80100
Total Aliphatics & Aromatics >C5-C44	<10000 µg/kg	TM414		77300	16200	12600	33900	193000	150000
Total Aliphatics >C5-C10	<50 µg/kg	TM089		95.6	<50	<50	74.1	82.4 4	62.1 4
Total Aromatics >EC5-EC10	<50 µg/kg	TM089		<50	<50	<50	<50	<50 4	<50 4
GRO >C5-C10	<20 µg/kg	TM089		95.6	<20	<20	74.1	82.4 4	62.1 4

Validated

CERTIFICATE OF ANALYSIS

SDG:	210219-92	**Client Reference:**	P18-669	**Report Number:**	589611
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	589297

TPH CWG (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	W203-1	W203-2	W203-3	W203-4	W205-1	W205-2
			Depth (m)	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	18/02/2021	18/02/2021	18/02/2021	18/02/2021	17/02/2021	17/02/2021
			Sample Time	.	.	.	.	.	.
			Date Received	19/02/2021	19/02/2021	19/02/2021	19/02/2021	19/02/2021	19/02/2021
			SDG Ref	210219-92	210219-92	210219-92	210219-92	210219-92	210219-92
			Lab Sample No.(s)	23759927	23759938	23759949	23759964	23759765	23759825
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		31 4	24.4 4	42 4	34 4	62 4	55 4
Aliphatics >C5-C6	<10 µg/kg	TM089		<10 4	<10 4	10.1 4	<10 4	<10 4	<10 4
Aliphatics >C6-C8	<10 µg/kg	TM089		31.9 4	44.1 4	53.8 4	50.7 4	33 4	42.2 4
Aliphatics >C8-C10	<10 µg/kg	TM089		29.5 4	44.1 4	51.5 4	46.4 4	34.3 4	45.9 4
Aliphatics >C10-C12	<1000 µg/kg	TM414		<1000	<1000	<1000	<1000	<1000	1050
Aliphatics >C12-C16	<1000 µg/kg	TM414		5120	4650	3740	4170	6360	8430
Aliphatics >C16-C21	<1000 µg/kg	TM414		30600	28100	21700	22600	8930	12200
Aliphatics >C21-C35	<1000 µg/kg	TM414		38900	48600	44000	37500	34000	29700
Aliphatics >C35-C44	<1000 µg/kg	TM414		6240	23700	10400	11600	14800	12100
Total Aliphatics >C10-C44	<5000 µg/kg	TM414		81300	106000	80300	76100	64600	63400
Total Aliphatics & Aromatics >C10-C44	<10000 µg/kg	TM414		217000	231000	245000	195000	184000	149000
Aromatics >EC5-EC7	<10 µg/kg	TM089		<10 4	<10 4	<10 4	10.8 4	<10 4	<10 4
Aromatics >EC7-EC8	<10 µg/kg	TM089		<10 4	11.3 4	16.8 4	16.2 4	<10 4	<10 4
Aromatics >EC8-EC10	<10 µg/kg	TM089		20.1 4	29.4 4	34.7 4	31.3 4	22.9 4	31 4
Aromatics > EC10-EC12	<1000 µg/kg	TM414		5870	3260	4920	3070	1280	1980
Aromatics > EC12-EC16	<1000 µg/kg	TM414		7120	5280	8090	4670	4530	5550
Aromatics > EC16-EC21	<1000 µg/kg	TM414		34400	33000	45900	30700	36600	22800
Aromatics > EC21-EC35	<1000 µg/kg	TM414		80500	78300	95000	74200	68400	50500
Aromatics >EC35-EC44	<1000 µg/kg	TM414		7870	5790	11100	6640	8200	4780
Aromatics > EC40-EC44	<1000 µg/kg	TM414		1570	<1000	1960	<1000	2510	1820
Total Aromatics > EC10-EC44	<5000 µg/kg	TM414		136000	126000	165000	119000	119000	85600
Total Aliphatics & Aromatics >C5-C44	<10000 µg/kg	TM414		217000	231000	245000	196000	184000	149000
Total Aliphatics >C5-C10	<50 µg/kg	TM089		61.4 4	88.1 4	115 4	97.1 4	67.3 4	88 4
Total Aromatics >EC5-EC10	<50 µg/kg	TM089		<50 4	<50 4	51.5 4	58.3 4	<50 4	<50 4
GRO >C5-C10	<20 µg/kg	TM089		61.4 4	88.1 4	167 4	155 4	67.3 4	88 4

Validated

CERTIFICATE OF ANALYSIS

SDG:	210219-92	**Client Reference:**	P18-669	**Report Number:**	589611
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	589297

TPH CWG (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	W205-3	W205-4	W205-5	W205-6	W205-7	W205-8
			Depth (m)	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	17/02/2021	17/02/2021	17/02/2021	17/02/2021	17/02/2021	17/02/2021
			Sample Time	.	.	.	.	.	.
			Date Received	19/02/2021	19/02/2021	19/02/2021	19/02/2021	19/02/2021	19/02/2021
			SDG Ref	210219-92	210219-92	210219-92	210219-92	210219-92	210219-92
			Lab Sample No.(s)	23759874	23759970	23759980	23759993	23760003	23760012
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		56.9 4	72.5	69 4	48.8 4	65 4	102
Aliphatics >C5-C6	<10 µg/kg	TM089		<10 4	12.7	<10 4	15.7 4	<10 4	12.6
Aliphatics >C6-C8	<10 µg/kg	TM089		15.3 4	55.9	47.2 4	65.3 4	39.9 4	58
Aliphatics >C8-C10	<10 µg/kg	TM089		14.2 4	105	58.1 4	132 4	50.8 4	152
Aliphatics >C10-C12	<1000 µg/kg	TM414		<1000	<1000	1240	<1000	<1000	<1000
Aliphatics >C12-C16	<1000 µg/kg	TM414		<1000	<1000	9960	4070	<1000	3390
Aliphatics >C16-C21	<1000 µg/kg	TM414		1750	1770	19500	8490	3430	14900
Aliphatics >C21-C35	<1000 µg/kg	TM414		11700	<1000	64800	22600	13700	25300
Aliphatics >C35-C44	<1000 µg/kg	TM414		2930	<1000	28600	7030	2820	6200
Total Aliphatics >C10-C44	<5000 µg/kg	TM414		16600	<5000	124000	42500	20900	49900
Total Aliphatics & Aromatics >C10-C44	<10000 µg/kg	TM414		82500	22800	284000	150000	75400	116000
Aromatics >EC5-EC7	<10 µg/kg	TM089		<10 4	<10	<10 4	<10 4	<10 4	<10
Aromatics >EC7-EC8	<10 µg/kg	TM089		<10 4	<10	<10 4	<10 4	10.9 4	<10
Aromatics >EC8-EC10	<10 µg/kg	TM089		<10 4	69.9	38.7 4	88.3 4	33.9 4	102
Aromatics > EC10-EC12	<1000 µg/kg	TM414		<1000	<1000	1700	4240	1500	1140
Aromatics > EC12-EC16	<1000 µg/kg	TM414		<1000	<1000	9140	6210	1990	2060
Aromatics > EC16-EC21	<1000 µg/kg	TM414		18800	6610	48200	33600	14200	12900
Aromatics > EC21-EC35	<1000 µg/kg	TM414		42500	11700	93200	57600	33800	43800
Aromatics >EC35-EC44	<1000 µg/kg	TM414		2940	<1000	7870	5920	3000	6430
Aromatics > EC40-EC44	<1000 µg/kg	TM414		<1000	<1000	1710	1620	<1000	2110
Total Aromatics > EC10-EC44	<5000 µg/kg	TM414		65900	20100	160000	108000	54500	66400
Total Aliphatics & Aromatics >C5-C44	<10000 µg/kg	TM414		82500	20200	284000	150000	75500	117000
Total Aliphatics >C5-C10	<50 µg/kg	TM089		<50 4	174	105 4	213 4	90.8 4	223
Total Aromatics >EC5-EC10	<50 µg/kg	TM089		<50 4	69.9	<50 4	88.3 4	<50 4	102
GRO >C5-C10	<20 µg/kg	TM089		<20 4	244	105 4	301 4	90.8 4	325

Validated

CERTIFICATE OF ANALYSIS

SDG:	210219-92	**Client Reference:**	P18-669	**Report Number:**	589611
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	589297

TPH CWG (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	W214-1	W214-2	W214-3	W214-4	W214-5	W214-6
			Depth (m)	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	17/02/2021	17/02/2021	17/02/2021	17/02/2021	17/02/2021	17/02/2021
			Sample Time	.	.	.	.	.	.
			Date Received	19/02/2021	19/02/2021	19/02/2021	19/02/2021	19/02/2021	19/02/2021
			SDG Ref	210219-92	210219-92	210219-92	210219-92	210219-92	210219-92
			Lab Sample No.(s)	23760027	23759769	23759774	23759780	23759784	23759789
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		84.8	75.3	79.3	77.2	75.8	88
Aliphatics >C5-C6	<10 µg/kg	TM089		<10	<10	<10	<10	<10	<10
Aliphatics >C6-C8	<10 µg/kg	TM089		<10	<10	<10	<10	<10	<10
Aliphatics >C8-C10	<10 µg/kg	TM089		<10	11.8	<10	<10	12.9	<10
Aliphatics >C10-C12	<1000 µg/kg	TM414		<1000	<1000	<1000	<1000	<1000	<1000
Aliphatics >C12-C16	<1000 µg/kg	TM414		<1000	<1000	<1000	<1000	<1000	<1000
Aliphatics >C16-C21	<1000 µg/kg	TM414		4770	1090	5830	<1000	1080	4840
Aliphatics >C21-C35	<1000 µg/kg	TM414		19000	7810	17300	9130	1010	11800
Aliphatics >C35-C44	<1000 µg/kg	TM414		4570	2320	4970	3260	<1000	4070
Total Aliphatics >C10-C44	<5000 µg/kg	TM414		28700	11200	28500	13100	<5000	21000
Total Aliphatics & Aromatics >C10-C44	<10000 µg/kg	TM414		58500	46800	101000	23300	33500	51800
Aromatics >EC5-EC7	<10 µg/kg	TM089		<10	<10	<10	<10	<10	<10
Aromatics >EC7-EC8	<10 µg/kg	TM089		<10	<10	<10	<10	<10	<10
Aromatics >EC8-EC10	<10 µg/kg	TM089		<10	<10	<10	<10	<10	<10
Aromatics > EC10-EC12	<1000 µg/kg	TM414		<1000	<1000	<1000	<1000	<1000	<1000
Aromatics > EC12-EC16	<1000 µg/kg	TM414		<1000	<1000	<1000	<1000	<1000	<1000
Aromatics > EC16-EC21	<1000 µg/kg	TM414		2090	9330	8770	<1000	7370	5830
Aromatics > EC21-EC35	<1000 µg/kg	TM414		21600	24700	44200	7750	21800	21300
Aromatics >EC35-EC44	<1000 µg/kg	TM414		5660	1180	19100	1510	1940	3430
Aromatics > EC40-EC44	<1000 µg/kg	TM414		1350	<1000	4200	<1000	<1000	<1000
Total Aromatics > EC10-EC44	<5000 µg/kg	TM414		29800	35600	72600	10200	31400	30800
Total Aliphatics & Aromatics >C5-C44	<10000 µg/kg	TM414		58500	46800	101000	23300	31400	51800
Total Aliphatics >C5-C10	<50 µg/kg	TM089		<50	<50	<50	<50	<50	<50
Total Aromatics >EC5-EC10	<50 µg/kg	TM089		<50	<50	<50	<50	<50	<50
GRO >C5-C10	<20 µg/kg	TM089		<20	<20	<20	<20	<20	<20

CERTIFICATE OF ANALYSIS

SDG:	210219-92	**Client Reference:**	P18-669	**Report Number:**	589611
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	589297

TPH CWG (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.				
			W172B-1	W172B-2			
Depth (m)			0.20 - 0.20	0.20 - 0.20			
Sample Type			Soil/Solid (S)	Soil/Solid (S)			
Date Sampled			18/02/2021	18/02/2021			
Sample Time			.	.			
Date Received			19/02/2021	19/02/2021			
SDG Ref			210219-92	210219-92			
Lab Sample No.(s)			23759884	23759897			
AGS Reference							
GRO Surrogate % recovery**	%	TM089	92	86.5			
Aliphatics >C5-C6	<10 µg/kg	TM089	12.9	11.5			
Aliphatics >C6-C8	<10 µg/kg	TM089	56.2	43.7			
Aliphatics >C8-C10	<10 µg/kg	TM089	330	445			
Aliphatics >C10-C12	<1000 µg/kg	TM414	<1000	<1000			
Aliphatics >C12-C16	<1000 µg/kg	TM414	3070	5930			
Aliphatics >C16-C21	<1000 µg/kg	TM414	30200	56000			
Aliphatics >C21-C35	<1000 µg/kg	TM414	56500	62200			
Aliphatics >C35-C44	<1000 µg/kg	TM414	12400	16600			
Total Aliphatics >C10-C44	<5000 µg/kg	TM414	102000	141000			
Total Aliphatics & Aromatics >C10-C44	<10000 µg/kg	TM414	2000000	4170000			
Aromatics >EC5-EC7	<10 µg/kg	TM089	23.4	26.5			
Aromatics >EC7-EC8	<10 µg/kg	TM089	26.9	29.9			
Aromatics >EC8-EC10	<10 µg/kg	TM089	220	297			
Aromatics > EC10-EC12	<1000 µg/kg	TM414	22500	354000			
Aromatics > EC12-EC16	<1000 µg/kg	TM414	178000	473000			
Aromatics > EC16-EC21	<1000 µg/kg	TM414	697000	1410000			
Aromatics > EC21-EC35	<1000 µg/kg	TM414	875000	1570000			
Aromatics >EC35-EC44	<1000 µg/kg	TM414	129000	224000			
Aromatics > EC40-EC44	<1000 µg/kg	TM414	28700	42000			
Total Aromatics > EC10-EC44	<5000 µg/kg	TM414	1900000	4030000			
Total Aliphatics & Aromatics >C5-C44	<10000 µg/kg	TM414	2000000	4170000			
Total Aliphatics >C5-C10	<50 µg/kg	TM089	399	500			
Total Aromatics >EC5-EC10	<50 µg/kg	TM089	270	353			
GRO >C5-C10	<20 µg/kg	TM089	669	853			

CERTIFICATE OF ANALYSIS

SDG:	210219-92	**Client Reference:**	P18-669	**Report Number:**	589611
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	589297

VOC MS (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	W34-1	W34-2	W34-3	W34-4	W34-5	W34-6
			Depth (m)	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	18/02/2021	18/02/2021	18/02/2021	18/02/2021	18/02/2021	18/02/2021
			Sample Time	.	.	.	.	.	.
			Date Received	19/02/2021	19/02/2021	19/02/2021	19/02/2021	19/02/2021	19/02/2021
			SDG Ref	210219-92	210219-92	210219-92	210219-92	210219-92	210219-92
			Lab Sample No.(s)	23759843	23759847	23759851	23759855	23759860	23759865
			AGS Reference						
Dibromofluoromethane**	%	TM116		109	107	106	106	107	107
Toluene-d8**	%	TM116		98.6	95.9	96.9	95.3	100	96.5
4-Bromofluorobenzene**	%	TM116		90.7	102	100	102	94.1	98.7
Methyl Tertiary Butyl Ether	<10 µg/kg	TM116		<200 M	<200 M	<200 M	<200 M	<200 M	<200 M
Benzene	<9 µg/kg	TM116		<180 M	<180 M	<180 M	<180 M	<180 M	<180 M
Toluene	<7 µg/kg	TM116		<140 M	<140 M	<140 M	<140 M	<140 M	<140 M
Ethylbenzene	<4 µg/kg	TM116		<80 M	<80 M	<80 M	<80 M	<80 M	<80 M
p/m-Xylene	<10 µg/kg	TM116		<200 #	<200 #	<200 #	<200 #	<200 #	<200 #
o-Xylene	<10 µg/kg	TM116		<200 M	<200 M	<200 M	<200 M	<200 M	<200 M
Naphthalene	<13 µg/kg	TM116		<260 M	<260 M	<260 M	<260 M	<260 M	<260 M
Sum of Detected Xylenes	<0.02 mg/kg	TM116		<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Sum of BTEX	<40 µg/kg	TM116		<800	<800	<800	<800	<800	<800

CERTIFICATE OF ANALYSIS

SDG:	210219-92	**Client Reference:**	P18-669	**Report Number:**	589611
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	589297

VOC MS (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	W34-7	W34-8	W172-1	W172-2	W194-1	W194-2
			Depth (m)	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	18/02/2021	18/02/2021	18/02/2021	18/02/2021	18/02/2021	18/02/2021
			Sample Time	.	.	.	.	.	.
			Date Received	19/02/2021	19/02/2021	19/02/2021	19/02/2021	19/02/2021	19/02/2021
			SDG Ref	210219-92	210219-92	210219-92	210219-92	210219-92	210219-92
			Lab Sample No.(s)	23759870	23759878	23759833	23759839	23759793	23759797
			AGS Reference						
Dibromofluoromethane**	%	TM116		109	106	110	106	113	123
Toluene-d8**	%	TM116		96.7	97.6	99.1	98.3	95.2	95.4
4-Bromofluorobenzene**	%	TM116		96.2	88.5	92	91.5	103	104
Methyl Tertiary Butyl Ether	<10 µg/kg	TM116		<200 M	<200 M	<200 M	<200 M	<200 M	<200 M
Benzene	<9 µg/kg	TM116		<180 M	<180 M	<180 M	<180 M	<180 M	<180 M
Toluene	<7 µg/kg	TM116		<140 M	<140 M	<140 M	<140 M	<140 M	<140 M
Ethylbenzene	<4 µg/kg	TM116		<80 M	<80 M	<80 M	<80 M	<80 M	<80 M
p/m-Xylene	<10 µg/kg	TM116		<200 #	<200 #	<200 #	<200 #	<200 #	<200 #
o-Xylene	<10 µg/kg	TM116		<200 M	<200 M	<200 M	<200 M	<200 M	<200 M
Naphthalene	<13 µg/kg	TM116		<260 M	<260 M	<260 M	<260 M	<260 M	<260 M
Sum of Detected Xylenes	<0.02 mg/kg	TM116		<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Sum of BTEX	<40 µg/kg	TM116		<800	<800	<800	<800	<800	<800

CERTIFICATE OF ANALYSIS

SDG:	210219-92	**Client Reference:**	P18-669	**Report Number:**	589611
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	589297

VOC MS (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	W195-1	W195-2	W196-1	W196-2	W202-1	W202-2
			Depth (m)	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	18/02/2021	18/02/2021	18/02/2021	18/02/2021	18/02/2021	18/02/2021
			Sample Time	.	.	.	.	.	.
			Date Received	19/02/2021	19/02/2021	19/02/2021	19/02/2021	19/02/2021	19/02/2021
			SDG Ref	210219-92	210219-92	210219-92	210219-92	210219-92	210219-92
			Lab Sample No.(s)	23759809	23759817	23759821	23759829	23759907	23759916
			AGS Reference						
Dibromofluoromethane**	%	TM116		108	139	114	107	97.5	100
Toluene-d8**	%	TM116		95.6	96.3	95.3	96.8	92.8	94.8
4-Bromofluorobenzene**	%	TM116		101	105	103	104	88.8	92.5
Methyl Tertiary Butyl Ether	<10 µg/kg	TM116		<200 M	<200 M	<200 M	<200 M	<200 M	<200 M
Benzene	<9 µg/kg	TM116		<180 M	<180 M	<180 M	<180 M	<180 M	<180 M
Toluene	<7 µg/kg	TM116		<140 M	<140 M	<140 M	<140 M	<140 M	<140 M
Ethylbenzene	<4 µg/kg	TM116		<80 M	<80 M	<80 M	<80 M	<80 M	<80 M
p/m-Xylene	<10 µg/kg	TM116		<200 #	<200 #	<200 #	<200 #	<200 #	<200 #
o-Xylene	<10 µg/kg	TM116		<200 M	<200 M	<200 M	<200 M	<200 M	<200 M
Naphthalene	<13 µg/kg	TM116		<260 M	<260 M	<260 M	<260 M	559 M	445 M
Sum of Detected Xylenes	<0.02 mg/kg	TM116		<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Sum of BTEX	<40 µg/kg	TM116		<800	<800	<800	<800	<800	<800

CERTIFICATE OF ANALYSIS

SDG:	210219-92	**Client Reference:**	P18-669	**Report Number:**	589611
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	589297

VOC MS (S)

Results Legend	
#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	W203-1	W203-2	W203-3	W203-4	W205-1	W205-2
			Depth (m)	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	18/02/2021	18/02/2021	18/02/2021	18/02/2021	17/02/2021	17/02/2021
			Sample Time	.	.	.	.	.	.
			Date Received	19/02/2021	19/02/2021	19/02/2021	19/02/2021	19/02/2021	19/02/2021
			SDG Ref	210219-92	210219-92	210219-92	210219-92	210219-92	210219-92
			Lab Sample No.(s)	23759927	23759938	23759949	23759964	23759765	23759825
			AGS Reference						
Dibromofluoromethane**	%	TM116		104	99.2	100	95.3	98.7	111
Toluene-d8**	%	TM116		93.4	90.9	97	90.1	93.2	94.6
4-Bromofluorobenzene**	%	TM116		93.2	77.7	79.2	84.3	87	95.4
Methyl Tertiary Butyl Ether	<10 µg/kg	TM116		<200 M	<200 M	<200 M	<200 M	<200 M	<200 M
Benzene	<9 µg/kg	TM116		<180 M	<180 M	<180 M	<180 M	<180 M	<180 M
Toluene	<7 µg/kg	TM116		<140 M	<140 M	<140 M	<140 M	<140 M	<140 M
Ethylbenzene	<4 µg/kg	TM116		<80 M	<80 M	<80 M	<80 M	<80 M	<80 M
p/m-Xylene	<10 µg/kg	TM116		<200 #	<200 #	<200 #	<200 #	<200 #	<200 #
o-Xylene	<10 µg/kg	TM116		<200 M	<200 M	<200 M	<200 M	<200 M	<200 M
Naphthalene	<13 µg/kg	TM116		608 M	992 M	634 M	1020 M	592 M	964 M
Sum of Detected Xylenes	<0.02 mg/kg	TM116		<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Sum of BTEX	<40 µg/kg	TM116		<800	<800	<800	<800	<800	<800

CERTIFICATE OF ANALYSIS

SDG:	210219-92	**Client Reference:**	P18-669	**Report Number:**	589611
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	589297

VOC MS (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	W205-3	W205-4	W205-5	W205-6	W205-7	W205-8
			Depth (m)	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	17/02/2021	17/02/2021	17/02/2021	17/02/2021	17/02/2021	17/02/2021
			Sample Time	.	.	.	.	.	.
			Date Received	19/02/2021	19/02/2021	19/02/2021	19/02/2021	19/02/2021	19/02/2021
			SDG Ref	210219-92	210219-92	210219-92	210219-92	210219-92	210219-92
			Lab Sample No.(s)	23759874	23759970	23759980	23759993	23760003	23760012
			AGS Reference						
Dibromofluoromethane**	%	TM116		105	105	107	105	105	104
Toluene-d8**	%	TM116		97.3	95.9	95.8	97.7	95.8	98.4
4-Bromofluorobenzene**	%	TM116		88.3	98.4	86.1	88.2	86.1	88.7
Methyl Tertiary Butyl Ether	<10 µg/kg	TM116		<200 M	<200 M	<200 M	<200 M	<200 M	<200 M
Benzene	<9 µg/kg	TM116		<180 M	<180 M	<180 M	<180 M	<180 M	<180 M
Toluene	<7 µg/kg	TM116		<140 M	<140 M	<140 M	<140 M	<140 M	<140 M
Ethylbenzene	<4 µg/kg	TM116		<80 M	<80 M	<80 M	<80 M	<80 M	<80 M
p/m-Xylene	<10 µg/kg	TM116		<200 #	<200 #	<200 #	<200 #	<200 #	<200 #
o-Xylene	<10 µg/kg	TM116		<200 M	<200 M	<200 M	<200 M	<200 M	<200 M
Naphthalene	<13 µg/kg	TM116		<260 M	<260 M	516 M	581 M	486 M	452 M
Sum of Detected Xylenes	<0.02 mg/kg	TM116		<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Sum of BTEX	<40 µg/kg	TM116		<800	<800	<800	<800	<800	<800

CERTIFICATE OF ANALYSIS

SDG:	210219-92	**Client Reference:**	P18-669	**Report Number:**	589611
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	589297

VOC MS (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	W214-1	W214-2	W214-3	W214-4	W214-5	W214-6
			Depth (m)	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	17/02/2021	17/02/2021	17/02/2021	17/02/2021	17/02/2021	17/02/2021
			Sample Time	.	.	.	.	.	.
			Date Received	19/02/2021	19/02/2021	19/02/2021	19/02/2021	19/02/2021	19/02/2021
			SDG Ref	210219-92	210219-92	210219-92	210219-92	210219-92	210219-92
			Lab Sample No.(s)	23760027	23759769	23759774	23759780	23759784	23759789
			AGS Reference						
Dibromofluoromethane**	%	TM116		107	107	106	112	108	108
Toluene-d8**	%	TM116		98.9	97.6	100	97.8	99.8	98.9
4-Bromofluorobenzene**	%	TM116		89.5	90.3	89.2	101	92.2	90.4
Methyl Tertiary Butyl Ether	<10 µg/kg	TM116		<200 M	<200 M	<200 M	<200 M	<200 M	<200 M
Benzene	<9 µg/kg	TM116		<180 M	<180 M	<180 M	<180 M	<180 M	<180 M
Toluene	<7 µg/kg	TM116		<140 M	<140 M	<140 M	<140 M	<140 M	<140 M
Ethylbenzene	<4 µg/kg	TM116		<80 M	<80 M	<80 M	<80 M	<80 M	<80 M
p/m-Xylene	<10 µg/kg	TM116		<200 #	<200 #	<200 #	<200 #	<200 #	<200 #
o-Xylene	<10 µg/kg	TM116		<200 M	<200 M	<200 M	<200 M	<200 M	<200 M
Naphthalene	<13 µg/kg	TM116		<260 M	<260 M	<260 M	<260 M	<260 M	<260 M
Sum of Detected Xylenes	<0.02 mg/kg	TM116		<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Sum of BTEX	<40 µg/kg	TM116		<800	<800	<800	<800	<800	<800

CERTIFICATE OF ANALYSIS

SDG:	210219-92	**Client Reference:**	P18-669	**Report Number:**	589611
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	589297

VOC MS (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	W172B-1	W172B-2
			Depth (m)	0.20 - 0.20	0.20 - 0.20
			Sample Type	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	18/02/2021	18/02/2021
			Sample Time	.	.
			Date Received	19/02/2021	19/02/2021
			SDG Ref	210219-92	210219-92
			Lab Sample No.(s)	23759884	23759897
			AGS Reference		
Dibromofluoromethane**	%	TM116		113	109
Toluene-d8**	%	TM116		96.3	99.2
4-Bromofluorobenzene**	%	TM116		102	88.7
Methyl Tertiary Butyl Ether	<10 µg/kg	TM116		<200 M	<200 M
Benzene	<9 µg/kg	TM116		<180 M	<180 M
Toluene	<7 µg/kg	TM116		<140 M	<140 M
Ethylbenzene	<4 µg/kg	TM116		<80 M	<80 M
p/m-Xylene	<10 µg/kg	TM116		<200 #	<200 #
o-Xylene	<10 µg/kg	TM116		<200 M	<200 M
Naphthalene	<13 µg/kg	TM116		7800 M	45500 M
Sum of Detected Xylenes	<0.02 mg/kg	TM116		<0.4	<0.4
Sum of BTEX	<40 µg/kg	TM116		<800	<800

CERTIFICATE OF ANALYSIS

SDG:	210219-92	**Client Reference:**	P18-669	**Report Number:**	589611
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	589297

Asbestos Identification - Solid Samples

Results Legend

#	ISO17025 accredited.
M	*m*CERTS accredited.
*	Subcontracted test.
(F)	Trigger breach confirmed
1-5&+$@	Sample deviation (see appendix)

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthophyllite	Fibrous Tremolite	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	W34-1 0.20 - 0.20 SOLID 18/02/2021 00:00:00 19/02/2021 05:00:00 210219-92 23759843 TM048	24/02/2021	Agnieszka Chelmowska	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	W34-3 0.20 - 0.20 SOLID 18/02/2021 00:00:00 19/02/2021 05:00:00 210219-92 23759851 TM048	24/02/2021	Agnieszka Chelmowska	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	W34-5 0.20 - 0.20 SOLID 18/02/2021 00:00:00 19/02/2021 05:00:00 210219-92 23759860 TM048	24/02/2021	Barbara Urbanek-Walsh	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	W34-7 0.20 - 0.20 SOLID 18/02/2021 00:00:00 19/02/2021 05:00:00 210219-92 23759870 TM048	24/02/2021	Agnieszka Chelmowska	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	W172-1 0.20 - 0.20 SOLID 18/02/2021 00:00:00 19/02/2021 05:00:00 210219-92 23759833 TM048	24/02/2021	Barbara Urbanek-Walsh	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	W194-1 0.20 - 0.20 SOLID 18/02/2021 00:00:00 19/02/2021 05:00:00 210219-92 23759793 TM048	24/02/2021	Paul Poynton	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	W195-1 0.20 - 0.20 SOLID 18/02/2021 00:00:00 19/02/2021 05:00:00 210219-92 23759809 TM048	25/02/2021	Marcin Magdziarek	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	W196-1 0.20 - 0.20 SOLID 18/02/2021 00:00:00 19/02/2021 05:00:00 210219-92 23759821 TM048	24/02/2021	Agnieszka Chelmowska	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected

Validated

CERTIFICATE OF ANALYSIS

SDG:	210219-92	**Client Reference:**	P18-669	**Report Number:**	589611
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	589297

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthophyllite	Fibrous Tremolite	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	W202-1 0.20 - 0.20 SOLID 18/02/2021 00:00:00 19/02/2021 05:00:00 210219-92 23759907 TM048	25/02/2021	Agnieszka Chelmowska	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	W203-1 0.20 - 0.20 SOLID 18/02/2021 00:00:00 19/02/2021 05:00:00 210219-92 23759927 TM048	25/02/2021	Agnieszka Chelmowska	Fibre Bundle in soil	Not Detected (#)	Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	W203-3 0.20 - 0.20 SOLID 18/02/2021 00:00:00 19/02/2021 05:00:00 210219-92 23759949 TM048	25/02/2021	Paul Poynton	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	W205-1 0.20 - 0.20 SOLID 17/02/2021 00:00:00 19/02/2021 05:00:00 210219-92 23759765 TM048	24/02/2021	Paul Poynton	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	W205-3 0.20 - 0.20 SOLID 17/02/2021 00:00:00 19/02/2021 05:00:00 210219-92 23759874 TM048	25/02/2021	Agnieszka Chelmowska	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	W205-5 0.20 - 0.20 SOLID 17/02/2021 00:00:00 19/02/2021 05:00:00 210219-92 23759980 TM048	25/02/2021	Agnieszka Chelmowska	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	W205-7 0.20 - 0.20 SOLID 17/02/2021 00:00:00 19/02/2021 05:00:00 210219-92 23760003 TM048	25/02/2021	Paul Poynton	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	W214-1 0.20 - 0.20 SOLID 17/02/2021 00:00:00 19/02/2021 05:00:00 210219-92 23760027 TM048	25/02/2021	Agnieszka Chelmowska	Loose fibres in soil	Not Detected (#)	Trace (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	W214-3 0.20 - 0.20 SOLID 17/02/2021 00:00:00 19/02/2021 05:00:00 210219-92 23759774 TM048	24/02/2021	Barbara Urbanek-Walsh	Loose fibres in soil.	Not Detected (#)	Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected

Validated

CERTIFICATE OF ANALYSIS

SDG:	210219-92	**Client Reference:**	P18-669	**Report Number:**	589611
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	589297

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthophyllite	Fibrous Tremolite	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	W214-5 0.20 - 0.20 SOLID 17/02/2021 00:00:00 19/02/2021 05:00:00 210219-92 23759784 TM048	25/02/2021	Marcin Magdziarek	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	W172B-1 0.20 - 0.20 SOLID 18/02/2021 00:00:00 19/02/2021 05:00:00 210219-92 23759884 TM048	25/02/2021	Agnieszka Chelmowska	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected

CERTIFICATE OF ANALYSIS

SDG:	210219-92	**Client Reference:**	P18-669	**Report Number:**	589611
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	589297

Asbestos Quantification - Full

Results Legend

#	ISO17025 accredited.
M	*m*CERTS accredited.
*	Subcontracted test.
(F)	Trigger breach confirmed
1-5&+$@	Sample deviation (see appendix)

		Additional Asbestos Components	Analysts Comments	Asbestos Quantification - Gravimetric - %	Asbestos Quantification - PCOM	Asbestos Quantification - Total - %
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	W203-1 0.20 - 0.20 SOLID 18/02/2021 00:00:00 19/02/2021 05:00:00 210219-92 23759927 TM304	None (#)	-	<0.001 (#)	<0.001 (#)	<0.001 (#)
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	W214-1 0.20 - 0.20 SOLID 17/02/2021 00:00:00 19/02/2021 05:00:00 210219-92 23760027 TM304	None (#)	-	<0.001 (#)	<0.001 (#)	<0.001 (#)
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	W214-3 0.20 - 0.20 SOLID 17/02/2021 00:00:00 19/02/2021 05:00:00 210219-92 23759774 TM304	None (#)	N/A	0.0303 (#)	<0.001 (#)	0.0303 (#)

Table of Results - Appendix

Method No	Reference	Description
PM024	Modified BS 1377	Soil preparation including homogenisation, moisture screens of soils for Asbestos Containing Material
TM024	Method 4500A & B, AWWA/APHA, 20th Ed., 1999	Determination of Exchangeable Ammonium and Ammoniacal Nitrogen as N by titration on solids
TM048	HSG 248, Asbestos: The analysts' guide for sampling, analysis and clearance procedures	Identification of Asbestos in Bulk Material
TM062 (S)	National Grid Property Holdings Methods for the Collection & Analysis of Samples from National Grid Sites version 1 Sec 3.9	Determination of Phenols in Soils by HPLC
TM089	Modified: US EPA Methods 8020 & 602	Determination of Gasoline Range Hydrocarbons (GRO) by Headspace GC-FID (C4-C12)
TM116	Modified: US EPA Method 8260, 8120, 8020, 624, 610 & 602	Determination of Volatile Organic Compounds by Headspace / GC-MS
TM132	In - house Method	ELTRA CS800 Operators Guide
TM133	BS 1377: Part 3 1990;BS 6068-2.5	Determination of pH in Soil and Water using the GLpH pH Meter
TM153	Method 4500A,B,C, I, M AWWA/APHA, 20th Ed., 1999	Determination of Total Cyanide, Free (Easily Liberatable) Cyanide and Thiocyanate using the Skalar SANS+ System Segmented Flow Analyser
TM181	US EPA Method 6010B	Determination of Routine Metals in Soil by iCap 6500 Duo ICP-OES
TM218	Shaker extraction - EPA method 3546.	The determination of PAH in soil samples by GC-MS
TM304	HSE Contract research Report no 83/1996	Asbestos Quantification in Soil: Fibres identified by morphology only
TM414	Analysis of Petroleum Hydrocarbons in Environmental Media – Total Petroleum Hydrocarbon Criteria	Determination of Speciated Extractable Petroleum Hydrocarbons in Soils by GCxGC-FID

NA = not applicable.

Chemical testing (unless subcontracted) performed at ALS Life Sciences Ltd Hawarden (Method codes TM) or ALS Life Sciences Ltd Aberdeen (Method codes S).

CERTIFICATE OF ANALYSIS

SDG:	210219-92	**Client Reference:**	P18-669	**Report Number:**	589611
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	589297

Test Completion Dates

Lab Sample No(s)	23759843	23759847	23759851	23759855	23759860	23759865	23759870	23759878	23759833	23759839
Customer Sample Ref.	W34-1	W34-2	W34-3	W34-4	W34-5	W34-6	W34-7	W34-8	W172-1	W172-2
AGS Ref.										
Depth	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
Ammonium Soil by Titration	25-Feb-2021	25-Feb-2021	25-Feb-2021	25-Feb-2021	25-Feb-2021	25-Feb-2021	25-Feb-2021	25-Feb-2021	25-Feb-2021	25-Feb-2021
Asbestos ID in Solid Samples	24-Feb-2021		24-Feb-2021		24-Feb-2021		24-Feb-2021		24-Feb-2021	
Cyanide Comp/Free/Total/Thiocyanate	24-Feb-2021	25-Feb-2021	25-Feb-2021	24-Feb-2021	25-Feb-2021	25-Feb-2021	25-Feb-2021	24-Feb-2021	24-Feb-2021	25-Feb-2021
EPH CWG GC (S)	23-Feb-2021	23-Feb-2021	23-Feb-2021	23-Feb-2021	23-Feb-2021	23-Feb-2021	23-Feb-2021	23-Feb-2021	23-Feb-2021	23-Feb-2021
GRO by GC-FID (S)	24-Feb-2021	24-Feb-2021	24-Feb-2021	24-Feb-2021	24-Feb-2021	24-Feb-2021	24-Feb-2021	25-Feb-2021	24-Feb-2021	24-Feb-2021
Metals in solid samples by OES	01-Mar-2021	25-Feb-2021	25-Feb-2021	01-Mar-2021	01-Mar-2021	01-Mar-2021	25-Feb-2021	01-Mar-2021	01-Mar-2021	01-Mar-2021
PAH by GCMS	24-Feb-2021	24-Feb-2021	23-Feb-2021	24-Feb-2021	24-Feb-2021	24-Feb-2021	24-Feb-2021	24-Feb-2021	23-Feb-2021	23-Feb-2021
pH	22-Feb-2021	22-Feb-2021	22-Feb-2021	22-Feb-2021	22-Feb-2021	22-Feb-2021	23-Feb-2021	22-Feb-2021	22-Feb-2021	22-Feb-2021
Phenols by HPLC (S)	23-Feb-2021	23-Feb-2021	23-Feb-2021	23-Feb-2021	23-Feb-2021	23-Feb-2021	24-Feb-2021	23-Feb-2021	24-Feb-2021	24-Feb-2021
Sample description	20-Feb-2021	20-Feb-2021	20-Feb-2021	20-Feb-2021	20-Feb-2021	20-Feb-2021	20-Feb-2021	20-Feb-2021	20-Feb-2021	20-Feb-2021
Total Organic Carbon	26-Feb-2021	25-Feb-2021	25-Feb-2021	26-Feb-2021	26-Feb-2021	26-Feb-2021	25-Feb-2021	26-Feb-2021	26-Feb-2021	25-Feb-2021
TPH CWG GC (S)	24-Feb-2021	24-Feb-2021	24-Feb-2021	24-Feb-2021	24-Feb-2021	24-Feb-2021	24-Feb-2021	25-Feb-2021	24-Feb-2021	24-Feb-2021
VOC MS (S)	25-Feb-2021	25-Feb-2021	25-Feb-2021	25-Feb-2021	25-Feb-2021	25-Feb-2021	24-Feb-2021	25-Feb-2021	25-Feb-2021	24-Feb-2021

Lab Sample No(s)	23759793	23759797	23759809	23759817	23759821	23759829	23759907	23759916	23759927	23759938
Customer Sample Ref.	W194-1	W194-2	W195-1	W195-2	W196-1	W196-2	W202-1	W202-2	W203-1	W203-2
AGS Ref.										
Depth	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
Ammonium Soil by Titration	25-Feb-2021	25-Feb-2021	25-Feb-2021	25-Feb-2021	25-Feb-2021	25-Feb-2021	25-Feb-2021	25-Feb-2021	25-Feb-2021	25-Feb-2021
Asbestos ID in Solid Samples	24-Feb-2021		25-Feb-2021		24-Feb-2021		25-Feb-2021		25-Feb-2021	
Asbestos Quantification - Full									08-Mar-2021	
Cyanide Comp/Free/Total/Thiocyanate	24-Feb-2021	24-Feb-2021	24-Feb-2021	24-Feb-2021	24-Feb-2021	24-Feb-2021	25-Feb-2021	25-Feb-2021	25-Feb-2021	25-Feb-2021
EPH CWG GC (S)	23-Feb-2021	23-Feb-2021	23-Feb-2021	23-Feb-2021	23-Feb-2021	23-Feb-2021	23-Feb-2021	23-Feb-2021	23-Feb-2021	23-Feb-2021
GRO by GC-FID (S)	24-Feb-2021	24-Feb-2021	24-Feb-2021	24-Feb-2021	24-Feb-2021	24-Feb-2021	25-Feb-2021	25-Feb-2021	25-Feb-2021	26-Feb-2021
Metals in solid samples by OES	26-Feb-2021	01-Mar-2021	25-Feb-2021	01-Mar-2021	26-Feb-2021	01-Mar-2021	01-Mar-2021	26-Feb-2021	25-Feb-2021	01-Mar-2021
PAH by GCMS	23-Feb-2021	24-Feb-2021	24-Feb-2021	23-Feb-2021	24-Feb-2021	24-Feb-2021	24-Feb-2021	23-Feb-2021	25-Feb-2021	24-Feb-2021
pH	22-Feb-2021	22-Feb-2021	22-Feb-2021	22-Feb-2021	22-Feb-2021	22-Feb-2021	22-Feb-2021	22-Feb-2021	22-Feb-2021	22-Feb-2021
Phenols by HPLC (S)	23-Feb-2021	23-Feb-2021	24-Feb-2021	24-Feb-2021	24-Feb-2021	24-Feb-2021	23-Feb-2021	24-Feb-2021	24-Feb-2021	23-Feb-2021
Sample description	20-Feb-2021	20-Feb-2021	20-Feb-2021	20-Feb-2021	20-Feb-2021	20-Feb-2021	20-Feb-2021	20-Feb-2021	20-Feb-2021	20-Feb-2021
Total Organic Carbon	26-Feb-2021	26-Feb-2021	26-Feb-2021	26-Feb-2021	26-Feb-2021	26-Feb-2021	26-Feb-2021	25-Feb-2021	25-Feb-2021	26-Feb-2021
TPH CWG GC (S)	24-Feb-2021	24-Feb-2021	24-Feb-2021	24-Feb-2021	24-Feb-2021	24-Feb-2021	25-Feb-2021	25-Feb-2021	25-Feb-2021	26-Feb-2021
VOC MS (S)	25-Feb-2021	25-Feb-2021	25-Feb-2021	25-Feb-2021	25-Feb-2021	25-Feb-2021	25-Feb-2021	25-Feb-2021	25-Feb-2021	25-Feb-2021

Lab Sample No(s)	23759949	23759964	23759765	23759825	23759874	23759970	23759980	23759993	23760003	23760012
Customer Sample Ref.	W203-3	W203-4	W205-1	W205-2	W205-3	W205-4	W205-5	W205-6	W205-7	W205-8
AGS Ref.										
Depth	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
Ammonium Soil by Titration	25-Feb-2021	25-Feb-2021	25-Feb-2021	25-Feb-2021	25-Feb-2021	25-Feb-2021	25-Feb-2021	25-Feb-2021	25-Feb-2021	25-Feb-2021
Asbestos ID in Solid Samples	25-Feb-2021		24-Feb-2021		25-Feb-2021		25-Feb-2021		25-Feb-2021	
Cyanide Comp/Free/Total/Thiocyanate	25-Feb-2021	25-Feb-2021	25-Feb-2021	25-Feb-2021	25-Feb-2021	25-Feb-2021	25-Feb-2021	25-Feb-2021	25-Feb-2021	25-Feb-2021
EPH CWG GC (S)	23-Feb-2021	23-Feb-2021	23-Feb-2021	23-Feb-2021	23-Feb-2021	23-Feb-2021	23-Feb-2021	23-Feb-2021	23-Feb-2021	23-Feb-2021
GRO by GC-FID (S)	24-Feb-2021	25-Feb-2021	25-Feb-2021	25-Feb-2021	26-Feb-2021	24-Feb-2021	24-Feb-2021	26-Feb-2021	24-Feb-2021	26-Feb-2021
Metals in solid samples by OES	25-Feb-2021	26-Feb-2021	25-Feb-2021	25-Feb-2021	01-Mar-2021	25-Feb-2021	25-Feb-2021	25-Feb-2021	25-Feb-2021	25-Feb-2021
PAH by GCMS	24-Feb-2021	23-Feb-2021	23-Feb-2021	23-Feb-2021	24-Feb-2021	24-Feb-2021	23-Feb-2021	24-Feb-2021	23-Feb-2021	24-Feb-2021
pH	22-Feb-2021	22-Feb-2021	22-Feb-2021	22-Feb-2021	22-Feb-2021	22-Feb-2021	22-Feb-2021	22-Feb-2021	22-Feb-2021	22-Feb-2021
Phenols by HPLC (S)	24-Feb-2021	23-Feb-2021	24-Feb-2021	24-Feb-2021	24-Feb-2021	24-Feb-2021	24-Feb-2021	24-Feb-2021	24-Feb-2021	24-Feb-2021
Sample description	20-Feb-2021	20-Feb-2021	20-Feb-2021	20-Feb-2021	20-Feb-2021	20-Feb-2021	20-Feb-2021	20-Feb-2021	20-Feb-2021	20-Feb-2021
Total Organic Carbon	25-Feb-2021	25-Feb-2021	25-Feb-2021	25-Feb-2021	26-Feb-2021	25-Feb-2021	25-Feb-2021	25-Feb-2021	25-Feb-2021	25-Feb-2021
TPH CWG GC (S)	24-Feb-2021	25-Feb-2021	25-Feb-2021	25-Feb-2021	26-Feb-2021	24-Feb-2021	24-Feb-2021	26-Feb-2021	24-Feb-2021	26-Feb-2021
VOC MS (S)	24-Feb-2021	25-Feb-2021	25-Feb-2021	25-Feb-2021	25-Feb-2021	25-Feb-2021	24-Feb-2021	25-Feb-2021	24-Feb-2021	25-Feb-2021

Validated

CERTIFICATE OF ANALYSIS

SDG:	210219-92	**Client Reference:**	P18-669	**Report Number:**	589611
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	589297

Lab Sample No(s)	23760027	23759769	23759774	23759780	23759784	23759789	23759884	23759897
Customer Sample Ref.	W214-1	W214-2	W214-3	W214-4	W214-5	W214-6	W172B-1	W172B-2
AGS Ref.								
Depth	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
Ammonium Soil by Titration	25-Feb-2021	25-Feb-2021	25-Feb-2021	25-Feb-2021	25-Feb-2021	25-Feb-2021	25-Feb-2021	25-Feb-2021
Asbestos ID in Solid Samples	25-Feb-2021		24-Feb-2021		25-Feb-2021		25-Feb-2021	
Asbestos Quantification - Full	08-Mar-2021		04-Mar-2021					
Cyanide Comp/Free/Total/Thiocyanate	25-Feb-2021	24-Feb-2021	25-Feb-2021	24-Feb-2021	24-Feb-2021	24-Feb-2021	25-Feb-2021	24-Feb-2021
EPH CWG GC (S)	23-Feb-2021	23-Feb-2021	23-Feb-2021	23-Feb-2021	23-Feb-2021	23-Feb-2021	23-Feb-2021	23-Feb-2021
GRO by GC-FID (S)	25-Feb-2021	25-Feb-2021	25-Feb-2021	24-Feb-2021	25-Feb-2021	24-Feb-2021	24-Feb-2021	24-Feb-2021
Metals in solid samples by OES	25-Feb-2021	01-Mar-2021	01-Mar-2021	01-Mar-2021	26-Feb-2021	01-Mar-2021	25-Feb-2021	01-Mar-2021
PAH by GCMS	23-Feb-2021	23-Feb-2021	24-Feb-2021	24-Feb-2021	23-Feb-2021	23-Feb-2021	23-Feb-2021	24-Feb-2021
pH	22-Feb-2021	22-Feb-2021	22-Feb-2021	22-Feb-2021	22-Feb-2021	22-Feb-2021	22-Feb-2021	22-Feb-2021
Phenols by HPLC (S)	24-Feb-2021	23-Feb-2021	24-Feb-2021	23-Feb-2021	24-Feb-2021	24-Feb-2021	24-Feb-2021	23-Feb-2021
Sample description	20-Feb-2021	20-Feb-2021	20-Feb-2021	20-Feb-2021	20-Feb-2021	20-Feb-2021	20-Feb-2021	20-Feb-2021
Total Organic Carbon	25-Feb-2021	26-Feb-2021	26-Feb-2021	26-Feb-2021	25-Feb-2021	26-Feb-2021	25-Feb-2021	26-Feb-2021
TPH CWG GC (S)	25-Feb-2021	25-Feb-2021	25-Feb-2021	24-Feb-2021	25-Feb-2021	24-Feb-2021	24-Feb-2021	24-Feb-2021
VOC MS (S)	25-Feb-2021	25-Feb-2021	25-Feb-2021	25-Feb-2021	25-Feb-2021	25-Feb-2021	25-Feb-2021	24-Feb-2021

Appendix General

1. Results are expressed on a dry weight basis (dried at 35ºC) for all soil analyses except for the following: NRA and CEN Leach tests, flash point LOI, pH, ammonium as NH4 by the BRE method, VOC TICs and SVOC TICs.

2. If sufficient sample is received a sub sample will be retained free of charge for 30 days after analysis is completed (e-mailed) for all sample types unless the sample is destroyed on testing. The prepared soil sub sample that is analysed for asbestos will be retained for a period of 6 months after the analysis date. All bulk samples will be retained for a period of 6 months after the analysis date. All samples received and not scheduled will be disposed of one month after the date of receipt unless we are instructed to the contrary. Once the initial period has expired, a storage charge will be applied for each month or part thereof until the client cancels the request for sample storage. ALS reserve the right to charge for samples received and stored but not analysed.

3. With respect to turnaround, we will always endeavour to meet client requirements wherever possible, but turnaround times cannot be absolutely guaranteed due to so many variables beyond our control.

4. We take responsibility for any test performed by sub-contractors (marked with an asterisk). We endeavour to use UKAS/MCERTS Accredited Laboratories, who either complete a quality questionnaire or are audited by ourselves. For some determinands there are no UKAS/MCERTS Accredited Laboratories, in this instance a laboratory with a known track record will be utilised.

5. If no separate volatile sample is supplied by the client, or if a headspace or sediment is present in the volatile sample, the integrity of the data may be compromised. This will be flagged up as an invalid VOC on the test schedule and the result marked as deviating on the test certificate.

6. NDP - No determination possible due to insufficient/unsuitable sample.

7. Results relate only to the items tested.

8. LoDs (Limit of Detection) for wet tests reported on a dry weight basis are not corrected for moisture content.

9. **Surrogate recoveries** - Surrogates are added to your sample to monitor recovery of the test requested. A % recovery is reported, results are not corrected for the recovery measured. Typical recoveries for organics tests are 70-130%. Recoveries in soils are affected by organic rich or clay rich matrices. Waters can be affected by remediation fluids or high amounts of sediment. Test results are only ever reported if all of the associated quality checks pass; it is assumed that all recoveries outside of the values above are due to matrix affect.

10. Stones/debris are not routinely removed. We always endeavour to take a representative sub sample from the received sample.

11. In certain circumstances the method detection limit may be elevated due to the sample being outside the calibration range. Other factors that may contribute to this include possible interferences. In both cases the sample would be diluted which would cause the method detection limit to be raised.

12. Mercury results quoted on soils will not include volatile mercury as the analysis is performed on a dried and crushed sample.

13. For leachate preparations other than Zero Headspace Extraction (ZHE) volatile loss may occur.

14. For the BSEN 12457-3 two batch process to allow the cumulative release to be calculated, the volume of the leachate produced is measured and filtered for all tests. We therefore cannot carry out any unfiltered analysis. The tests affected include volatiles GCFID/GCMS and all subcontracted analysis.

15. Analysis and identification of specific compounds using GCFID is by retention time only, and we routinely calibrate and quantify for benzene, toluene, ethylbenzenes and xylenes (BTEX). For total volatiles in the C5-C12 range, the total area of the chromatogram is integrated and expressed as ug/kg or ug/l. Although this analysis is commonly used for the quantification of gasoline range organics (GRO), the system will also detect other compounds such as chlorinated solvents, and this may lead to a falsely high result with respect to hydrocarbons only. It is not possible to specifically identify these non-hydrocarbons, as standards are not routinely run for any other compounds, and for more definitive identification, volatiles by GCMS should be utilised.

16. We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample. Other coarse granular material such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

17. **Tentatively Identified Compounds (TICs)** are non-target peaks in VOC and SVOC analysis. All non-target peaks detected with a concentration above the LoD are subjected to a mass spectral library search. Non-target peaks with a library search confidence of >75% are reported based on the best mass spectral library match. When a non-target peak with a library search confidence of <75% is detected it is reported as "mixed hydrocarbons". Non-target compounds identified from the scan data are semi-quantified relative to one of the deuterated internal standards, under the same chromatographic conditions as the target compounds. This result is reported as a semi-quantitative value and reported as Tentatively Identified Compounds (TICs). TICs are outside the scope of UKAS accreditation and are not moisture corrected.

18. **Sample Deviations**

If a sample is classed as deviated then the associated results may be compromised.

1	**Container with Headspace provided for volatiles analysis**
2	**Incorrect container received**
3	**Deviation from method**
4	**Matrix interference**
♦	**Sample holding time exceeded in laboratory**
@	**Sample holding time exceeded due to late arrival of instructions or samples**
§	**Sampled on date not provided**

19. **Asbestos**

When requested, the individual sub sample scheduled will be analysed in house for the presence of asbestos fibres and asbestos containing material by our documented in house method TM048 based on HSG 248 (2005), which is accredited to ISO17025. If a specific asbestos fibre type is not found this will be reported as "Not detected". If no asbestos fibre types are found all will be reported as "Not detected" and the sub sample analysed deemed to be clear of asbestos. If an asbestos fibre type is found it will be reported as detected (for each fibre type found). Testing can be carried out on asbestos positive samples, but, due to Health and Safety considerations, may be replaced by alternative tests or reported as No Determination Possible (NDP). The quantity of asbestos present is not determined unless specifically requested.

Identification of Asbestos in Bulk Materials & Soils

The results for identification of asbestos in bulk materials are obtained from supplied bulk materials which have been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

The results for identification of asbestos in soils are obtained from a homogenised sub sample which has been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

Asbestos Type	Common Name
Chrysotile	White Asbestos
Amosite	Brown Asbestos
Crocidolite	Blue Asbestos
Fibrous Actinolite	-
Fibrous Anthophyllite	-
Fibrous Tremolite	-

Visual Estimation Of Fibre Content

Estimation of fibre content is not permitted as part of our UKAS accredited test other than: - Trace - Where only one or two asbestos fibres were identified.

Respirable Fibres

Respirable fibres are defined as fibres of <3 µm diameter, longer than 5 µm and with aspect ratios of at least 3:1 that can be inhaled into the lower regions of the lung and are generally acknowledged to be most important predictor of hazard and risk for cancers of the lung.
Standing Committee of Analysts, *The Quantification of Asbestos in Soil (2017).*

Further guidance on typical asbestos fibre content of manufactured products can be found in HSG 264.

The identification of asbestos containing materials and soils falls within our schedule of tests for which we hold UKAS accreditation, however opinions, interpretations and all other information contained in the report are outside the scope of UKAS accreditation.

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Rodgers Leask
Office 225
2430/2440
Aztec West
Almondsbury
Bristol
BS32 4QA

Attention: Elliot Thomas

CERTIFICATE OF ANALYSIS

Date of report Generation:	14 April 2021
Customer:	Rodgers Leask
Sample Delivery Group (SDG):	210331-78
Your Reference:	P18-669
Location:	Llanwern
Report No:	593957

This report has been revised and directly supersedes 593510 in its entirety.

We received 19 samples on Wednesday March 31, 2021 and 19 of these samples were scheduled for analysis which was completed on Wednesday April 14, 2021. Accredited laboratory tests are defined within the report, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation.

Should this report require incorporation into client reports, it must be used in its entirety and not simply with the data sections alone.

Chemical testing (unless subcontracted) performed at ALS Life Sciences Ltd Hawarden (Method codes TM) or ALS Life Sciences Ltd Aberdeen (Method codes S).

All sample data is provided by the customer. The reported results relate to the sample supplied, and on the basis that this data is correct.
Incorrect sampling dates and/or sample information will affect the validity of results.
The customer is not permitted to reproduce this report except in full without the approval of the laboratory.

Approved By:

Sonia McWhan

Operations Manager

CERTIFICATE OF ANALYSIS

SDG:	210331-78	**Client Reference:**	P18-669	**Report Number:**	593957
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	593510

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
24004278	R101-1		0.20 - 0.20	29/03/2021
24004378	R102-2		0.20 - 0.20	29/03/2021
24004243	R102-3		0.20 - 0.20	29/03/2021
24004251	R102-4		0.20 - 0.20	29/03/2021
24004257	R102-5		0.20 - 0.20	29/03/2021
24004264	R102-6		0.20 - 0.20	29/03/2021
24004269	R102-7		0.20 - 0.20	29/03/2021
24004283	R106-1		0.20 - 0.20	29/03/2021
24004293	R106-2		0.20 - 0.20	29/03/2021
24004353	R127-1		0.20 - 0.20	29/03/2021
24004362	R127-2		0.20 - 0.20	29/03/2021
24004368	R127-3		0.20 - 0.20	29/03/2021
24004298	R-135-1		0.20 - 0.20	29/03/2021
24004304	R-135-2		0.20 - 0.20	29/03/2021
24004326	W-89-1		0.20 - 0.20	29/03/2021
24004234	W-208-4-1		0.20 - 0.20	29/03/2021
24004311	W-208-4-2		0.20 - 0.20	29/03/2021
24004335	W-208-4-3		0.20 - 0.20	29/03/2021
24004343	W-208-4-4		0.20 - 0.20	29/03/2021

Only received samples which have had analysis scheduled will be shown on the following pages.

Validated

CERTIFICATE OF ANALYSIS

SDG:	210331-78	**Client Reference:**	P18-669	**Report Number:**	593957
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	593510

Results Legend

X Test

N No Determination Possible

Sample Types -

S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

Lab Sample No(s)			24004278			24004378			24004243		24004251			24004257		24004264			24004269		24004283
Customer Sample Reference			R101-1			R102-2			R102-3		R102-4			R102-5		R102-6			R102-7		R106-1
AGS Reference																					
Depth (m)			0.20 - 0.20			0.20 - 0.20			0.20 - 0.20		0.20 - 0.20			0.20 - 0.20		0.20 - 0.20			0.20 - 0.20		0.20 - 0.20
Container			1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)
Sample Type			S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
Ammonium Soil by Titration	All	NDPs: 0 Tests: 19		X			X		X			X		X			X		X		X
Asbestos ID in Solid Samples	All	NDPs: 0 Tests: 10	X			X					X					X					
Asbestos Quantification - Full	All	NDPs: 0 Tests: 1														X					
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 19		X			X		X			X		X			X		X		X
EPH CWG GC (S)	All	NDPs: 0 Tests: 19		X			X		X			X		X			X		X		X
GRO by GC-FID (S)	All	NDPs: 0 Tests: 19			X			X		X			X		X			X		X	
Metals in solid samples by OES	All	NDPs: 0 Tests: 19		X			X		X			X		X			X		X		X
PAH by GCMS	All	NDPs: 0 Tests: 19		X			X		X			X		X			X		X		X
pH	All	NDPs: 0 Tests: 19		X			X		X			X		X			X		X		X
Phenols by HPLC (S)	All	NDPs: 0 Tests: 19		X			X		X			X		X			X		X		X
Sample description	All	NDPs: 0 Tests: 18		X			X		X			X		X			X		X		X
Total Organic Carbon	All	NDPs: 0 Tests: 19		X			X		X			X		X			X		X		X
TPH CWG GC (S)	All	NDPs: 0 Tests: 19		X			X		X			X		X			X		X		X
VOC MS (S)	All	NDPs: 0 Tests: 19			X			X		X			X		X			X		X	

24004234	W-208-4-1		0.20 - 0.20	250g Amber Jar (ALE210)	S	X			X	X		X	X	X	X	X	X	X					
				1kg TUB with Handle (ALE260)	S		X																
24004326	W-89-1		0.20 - 0.20	60g VOC (ALE215)	S						X												X
				250g Amber Jar (ALE210)	S	X			X	X		X	X	X	X	X	X	X					
24004304	R-135-2		0.20 - 0.20	60g VOC (ALE215)	S						X												X
				250g Amber Jar (ALE210)	S	X			X	X		X	X	X	X	X	X	X					
				1kg TUB with Handle (ALE260)	S		X																
24004298	R-135-1		0.20 - 0.20	60g VOC (ALE215)	S						X												X
				250g Amber Jar (ALE210)	S	X			X	X		X	X	X	X	X	X	X					
24004368	R127-3		0.20 - 0.20	60g VOC (ALE215)	S						X												X
				250g Amber Jar (ALE210)	S	X			X	X		X	X	X	X	X	X	X					
				1kg TUB with Handle (ALE260)	S		X																
24004362	R127-2		0.20 - 0.20	60g VOC (ALE215)	S						X												X
				250g Amber Jar (ALE210)	S	X			X	X		X	X	X	X			X	X				
24004353	R127-1		0.20 - 0.20	60g VOC (ALE215)	S						X												X
				250g Amber Jar (ALE210)	S	X			X	X		X	X	X	X	X	X	X					
				1kg TUB with Handle (ALE260)	S		X																
24004293	R106-2		0.20 - 0.20	60g VOC (ALE215)	S						X												X
				250g Amber Jar (ALE210)	S	X			X	X		X	X	X	X	X	X	X					
				1kg TUB with Handle (ALE260)	S		X																
24004283	R106-1		0.20 - 0.20	60g VOC (ALE215)	S						X												X

Validated

CERTIFICATE OF ANALYSIS

SDG:	210331-78	**Client Reference:**	P18-669	**Report Number:**	593957
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	593510

Results Legend

X Test

N No Determination Possible

Sample Types -
S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

Lab Sample No(s)			24004234	24004311			24004335		24004343	
Customer Sample Reference			W-208-4-1	W-208-4-2			W-208-4-3		W-208-4-4	
AGS Reference										
Depth (m)			0.20 - 0.20	0.20 - 0.20			0.20 - 0.20		0.20 - 0.20	
Container			60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)
Sample Type			S	S	S	S	S	S	S	S
Ammonium Soil by Titration	All	NDPs: 0 Tests: 19		X			X		X	
Asbestos ID in Solid Samples	All	NDPs: 0 Tests: 10				X				
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 19		X			X		X	
EPH CWG GC (S)	All	NDPs: 0 Tests: 19		X			X		X	
GRO by GC-FID (S)	All	NDPs: 0 Tests: 19	X		X			X		X
Metals in solid samples by OES	All	NDPs: 0 Tests: 19		X			X		X	
PAH by GCMS	All	NDPs: 0 Tests: 19		X			X		X	
pH	All	NDPs: 0 Tests: 19		X			X		X	
Phenols by HPLC (S)	All	NDPs: 0 Tests: 19		X			X		X	
Sample description	All	NDPs: 0 Tests: 18		X			X		X	
Total Organic Carbon	All	NDPs: 0 Tests: 19		X			X		X	
TPH CWG GC (S)	All	NDPs: 0 Tests: 19		X			X		X	
VOC MS (S)	All	NDPs: 0 Tests: 19	X		X			X		X

CERTIFICATE OF ANALYSIS

SDG:	210331-78	**Client Reference:**	P18-669	**Report Number:**	593957
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	593510

Sample Descriptions

Grain Sizes

very fine	<0.063mm	**fine**	0.063mm - 0.1mm	**medium**	0.1mm - 2mm	**coarse**	2mm - 10mm	**very coarse**	>10mm

Lab Sample No(s)	Customer Sample Ref.	Depth (m)	Colour	Description	Inclusions	Inclusions 2
24004278	R101-1	0.20 - 0.20	Dark Brown	Clay	Stones	Vegetation
24004378	R102-2	0.20 - 0.20	Dark Brown	Loamy Sand	Vegetation	Stones
24004243	R102-3	0.20 - 0.20	Dark Brown	Sand	Vegetation	Stones
24004251	R102-4	0.20 - 0.20	Dark Brown	Loamy Sand	Vegetation	Stones
24004257	R102-5	0.20 - 0.20	Dark Brown	Sandy Clay Loam	Vegetation	Stones
24004264	R102-6	0.20 - 0.20	Dark Brown	Sand	None	Stones
24004269	R102-7	0.20 - 0.20	Dark Brown	Sand	Vegetation	Stones
24004283	R106-1	0.20 - 0.20	Dark Brown	Loamy Sand	Vegetation	Stones
24004293	R106-2	0.20 - 0.20	Dark Brown	Silty Clay Loam	Stones	Vegetation
24004353	R127-1	0.20 - 0.20	Dark Brown	Loamy Sand	Stones	Crushed Brick
24004362	R127-2	0.20 - 0.20	Dark Brown	Sandy Loam	Vegetation	Brick
24004368	R127-3	0.20 - 0.20	Dark Brown	Sandy Loam	Stones	None
24004298	R-135-1	0.20 - 0.20	Black	Loamy Sand	Stones	Vegetation
24004304	R-135-2	0.20 - 0.20	Black	Loamy Sand	Stones	None
24004326	W-89-1	0.20 - 0.20	Dark Brown	Loamy Sand	Stones	Vegetation
24004234	W-208-4-1	0.20 - 0.20	Dark Brown	Loamy Sand	Stones	None
24004311	W-208-4-2	0.20 - 0.20	Dark Brown	Loamy Sand	Stones	None
24004335	W-208-4-3	0.20 - 0.20	Dark Brown	Loamy Sand	Stones	None
24004343	W-208-4-4	0.20 - 0.20	Dark Brown	Sandy Loam	Stones	None

These descriptions are only intended to act as a cross check if sample identities are questioned, and to provide a log of sample matrices with respect to MCERTS validation. They are not intended as full geological descriptions.

We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally ocurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample.

Other coarse granular materials such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

Validated

CERTIFICATE OF ANALYSIS

SDG:	210331-78	**Client Reference:**	P18-669	**Report Number:**	593957
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	593510

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	R101-1	R102-2	R102-3	R102-4	R102-5	R102-6
			Depth (m)	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	29/03/2021	29/03/2021	29/03/2021	29/03/2021	29/03/2021	29/03/2021
			Sample Time	.	.	.	.	.	.
			Date Received	31/03/2021	31/03/2021	31/03/2021	31/03/2021	31/03/2021	31/03/2021
			SDG Ref	210331-78	210331-78	210331-78	210331-78	210331-78	210331-78
			Lab Sample No.(s)	24004278	24004378	24004243	24004251	24004257	24004264
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		13	19	16	20	22	11
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	<12 M	<12 M	<12 M	<12 M	<12 M
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	0.0124 M	<0.01 M	<0.01 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M
Soil Organic Matter (SOM)	<0.35 %	TM132		1.03 #	5.74 #	7.79 #	24.8 #	4.31 #	2.9 #
pH	1 pH Units	TM133		8.68 M	9.39 M	8.66 M	8.35 M	8.5 M	11.4 M
Cyanide, Total	<1 mg/kg	TM153		<1 M	1.5 M	9.84 M	4.82 M	<1 M	3.14 M
Arsenic	<0.6 mg/kg	TM181		8.55 M	13.2 M	20.2 M	11.2 M	12.1 M	6.16 M
Cadmium	<0.02 mg/kg	TM181		0.254 M	0.797 M	10.1 M	2.2 M	0.717 M	0.729 M
Chromium	<0.9 mg/kg	TM181		18.1 M	54 M	162 M	326 M	39.1 M	849 M
Copper	<1.4 mg/kg	TM181		13.9 M	21.7 M	62.4 M	29.5 M	17.4 M	61 M
Iron	<1000 mg/kg	TM181		19900 #	71700 #	229000 #	129000 #	51100 #	145000 #
Lead	<0.7 mg/kg	TM181		25.2 M	191 M	1870 M	569 M	142 M	222 M
Manganese	<0.13 mg/kg	TM181		820 M	5980 M	14000 M	14300 M	1790 M	57700 M
Mercury	<0.1 mg/kg	TM181		<0.1 M	<0.1 M	<1 M	<1 M	<0.1 M	<1 M
Nickel	<0.2 mg/kg	TM181		22.1 M	21.9 M	41.8 M	26.2 M	33.6 M	9.45 M
Selenium	<1 mg/kg	TM181		<1 #	1.9 #	<10 #	11.1 #	<1 #	27 #
Vanadium	<0.2 mg/kg	TM181		25.7 #	116 #	386 #	717 #	83 #	742 #
Zinc	<1.9 mg/kg	TM181		92.4 M	824 M	6130 M	1520 M	499 M	1240 M
Asbestos Quantification - Gravimetric - %	<0.001 %	TM304							<0.001 #
Asbestos Quantification - PCOM Evaluation - %	<0.001 %	TM304							<0.001 #
Additional Asbestos Components (Using TM048)		TM304							None #
Analysts Comments		TM304							N/A
Asbestos Quantification - Total - %	<0.001 %	TM304							<0.001 #

Validated

CERTIFICATE OF ANALYSIS

SDG:	210331-78	**Client Reference:**	P18-669	**Report Number:**	593957
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	593510

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	R102-7	R106-1	R106-2	R127-1	R127-2	R127-3
			Depth (m)	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	29/03/2021	29/03/2021	29/03/2021	29/03/2021	29/03/2021	29/03/2021
			Sample Time	.	.	.	.	.	.
			Date Received	31/03/2021	31/03/2021	31/03/2021	31/03/2021	31/03/2021	31/03/2021
			SDG Ref	210331-78	210331-78	210331-78	210331-78	210331-78	210331-78
			Lab Sample No.(s)	24004269	24004283	24004293	24004353	24004362	24004368
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		17	16	19	9.9	12	12
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	<12 M	<12 M	<12 M	<12 M	<12 M
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 M	0.0119 M	0.0123 M	<0.01 M	<0.01 M	<0.01 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M
Soil Organic Matter (SOM)	<0.35 %	TM132		7.74 #	12.1 #	8.96 #	4.74 #	6.55 #	3.1 #
pH	1 pH Units	TM133		8.69 M	8.75 M	8.75 M	9.13 M	9.54 M	9.6 M
Cyanide, Total	<1 mg/kg	TM153		9.37 M	<1 M	<1 M	<1 M	<1 M	<1 M
Arsenic	<0.6 mg/kg	TM181		20.3 M	9.49 M	11.2 M	20 M	14.2 M	14 M
Cadmium	<0.02 mg/kg	TM181		8.76 M	0.267 M	0.376 M	<0.2 M	<0.2 M	<0.2 M
Chromium	<0.9 mg/kg	TM181		99.7 M	109 M	62.1 M	71.6 M	132 M	152 M
Copper	<1.4 mg/kg	TM181		64.9 M	18.3 M	14 M	51.5 M	25 M	30.3 M
Iron	<1000 mg/kg	TM181		242000 #	74500 #	35600 #	207000 #	161000 #	214000 #
Lead	<0.7 mg/kg	TM181		1750 M	90.1 M	79.5 M	74.1 M	75.7 M	94.3 M
Manganese	<0.13 mg/kg	TM181		9990 M	8270 M	3470 M	10200 M	12300 M	14700 M
Mercury	<0.1 mg/kg	TM181		<1 M	<0.1 M	<1 M	<1 M	<1 M	<1 M
Nickel	<0.2 mg/kg	TM181		41 M	20.4 M	21.8 M	40.1 M	24.7 M	29 M
Selenium	<1 mg/kg	TM181		<10 #	2.77 #	<10 #	<10 #	<10 #	<10 #
Vanadium	<0.2 mg/kg	TM181		315 #	116 #	66.8 #	161 #	212 #	259 #
Zinc	<1.9 mg/kg	TM181		5990 M	400 M	276 M	239 M	240 M	300 M

Validated

CERTIFICATE OF ANALYSIS

SDG:	210331-78	**Client Reference:**	P18-669	**Report Number:**	593957
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	593510

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	R-135-1	R-135-2	W-89-1	W-208-4-1	W-208-4-2	W-208-4-3
			Depth (m)	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	29/03/2021	29/03/2021	29/03/2021	29/03/2021	29/03/2021	29/03/2021
			Sample Time	.	.	.	.	.	.
			Date Received	31/03/2021	31/03/2021	31/03/2021	31/03/2021	31/03/2021	31/03/2021
			SDG Ref	210331-78	210331-78	210331-78	210331-78	210331-78	210331-78
			Lab Sample No.(s)	24004298	24004304	24004326	24004234	24004311	24004335
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		10	9.9	7.3	12	10	11
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	<12 M	<12 M	<12 M	<12 M	<12 M
Phenol	<0.01 mg/kg	TM062 (S)		0.0111 M	0.0111 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Cresols	<0.01 mg/kg	TM062 (S)		0.0222 M	0.0111 M	0.0108 M	<0.01 M	<0.01 M	<0.01 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M
Soil Organic Matter (SOM)	<0.35 %	TM132		26.9 #	40.2 #	1.81 #	2.53 #	2.86 #	2.62 #
pH	1 pH Units	TM133		9.55 M	9.72 M	9.26 M	9.71 M	10.3 M	9.65 M
Cyanide, Total	<1 mg/kg	TM153		<1 M	<1 M	<1 M	<1 M	<1 M	<1 M
Arsenic	<0.6 mg/kg	TM181		7.08 M	47.1 M	42.3 M	16.8 M	11.7 M	20 M
Cadmium	<0.02 mg/kg	TM181		<0.2 M	0.929 M	0.841 M	<0.2 M	<0.2 M	<0.2 M
Chromium	<0.9 mg/kg	TM181		244 M	64.5 M	412 M	107 M	32.5 M	125 M
Copper	<1.4 mg/kg	TM181		17.4 M	27.7 M	136 M	27 M	37.6 M	57.8 M
Iron	<1000 mg/kg	TM181		132000 #	58400 #	126000 #	254000 #	185000 #	218000 #
Lead	<0.7 mg/kg	TM181		66.4 M	22.9 M	539 M	54.3 M	113 M	102 M
Manganese	<0.13 mg/kg	TM181		24100 M	865 M	24100 M	10200 M	6830 M	11700 M
Mercury	<0.1 mg/kg	TM181		<1 M	<0.1 M	<1 M	<1 M	<1 M	<1 M
Nickel	<0.2 mg/kg	TM181		15.6 M	43.9 M	20.2 M	20.6 M	21.7 M	30.6 M
Selenium	<1 mg/kg	TM181		10 #	<1 #	11.4 #	<10 #	<10 #	<10 #
Vanadium	<0.2 mg/kg	TM181		966 #	114 #	332 #	150 #	149 #	224 #
Zinc	<1.9 mg/kg	TM181		189 M	125 M	998 M	212 M	347 M	325 M

Validated

CERTIFICATE OF ANALYSIS

SDG:	210331-78	**Client Reference:**	P18-669	**Report Number:**	593957
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	593510

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Customer Sample Ref.	W-208-4-4
Depth (m)	0.20 - 0.20
Sample Type	Soil/Solid (S)
Date Sampled	29/03/2021
Sample Time	.
Date Received	31/03/2021
SDG Ref	210331-78
Lab Sample No.(s)	24004343
AGS Reference	

Component	LOD/Units	Method	
Moisture Content Ratio (% of as received sample)	%	PM024	14
Exchangeable Ammonia as N	<12 mg/kg	TM024	<12 M
Phenol	<0.01 mg/kg	TM062 (S)	<0.01 M
Cresols	<0.01 mg/kg	TM062 (S)	<0.01 M
Xylenols	<0.015 mg/kg	TM062 (S)	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)	<0.035 M
Soil Organic Matter (SOM)	<0.35 %	TM132	4.1 #
pH	1 pH Units	TM133	9.12 M
Cyanide, Total	<1 mg/kg	TM153	<1 M
Arsenic	<0.6 mg/kg	TM181	20.2 M
Cadmium	<0.02 mg/kg	TM181	0.397 M
Chromium	<0.9 mg/kg	TM181	90.8 M
Copper	<1.4 mg/kg	TM181	53.4 M
Iron	<1000 mg/kg	TM181	194000 #
Lead	<0.7 mg/kg	TM181	162 M
Manganese	<0.13 mg/kg	TM181	13100 M
Mercury	<0.1 mg/kg	TM181	<1 M
Nickel	<0.2 mg/kg	TM181	30 M
Selenium	<1 mg/kg	TM181	<10 #
Vanadium	<0.2 mg/kg	TM181	205 #
Zinc	<1.9 mg/kg	TM181	467 M

Validated

CERTIFICATE OF ANALYSIS

SDG:	210331-78	**Client Reference:**	P18-669	**Report Number:**	593957
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	593510

PAH by GCMS

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	R101-1	R102-2	R102-3	R102-4	R102-5	R102-6
			Depth (m)	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	29/03/2021	29/03/2021	29/03/2021	29/03/2021	29/03/2021	29/03/2021
			Sample Time	.	.	.	.	.	.
			Date Received	31/03/2021	31/03/2021	31/03/2021	31/03/2021	31/03/2021	31/03/2021
			SDG Ref	210331-78	210331-78	210331-78	210331-78	210331-78	210331-78
			Lab Sample No.(s)	24004278	24004378	24004243	24004251	24004257	24004264
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		88.7	88.7	88.2	89.2	89.8	87.8
Acenaphthene-d10 % recovery**	%	TM218		92.2	90.9	92.9	92.9	93.6	93.2
Phenanthrene-d10 % recovery**	%	TM218		93	91.2	91.7	93.3	94.5	97.7
Chrysene-d12 % recovery**	%	TM218		97.3	90.9	76	91.1	98.8	96.5
Perylene-d12 % recovery**	%	TM218		97	88	68.7	86.8	93.2	90.6
Naphthalene	<9 µg/kg	TM218		13.3 M	122 M	141 M	379 M	134 M	109 M
Acenaphthylene	<12 µg/kg	TM218		<12 M	69.5 M	29.9 M	507 M	89.7 M	114 M
Acenaphthene	<8 µg/kg	TM218		<8 M	18 M	39.3 M	83.7 M	<8 M	16 M
Fluorene	<10 µg/kg	TM218		<10 M	40.1 M	71.5 M	225 M	26.1 M	36.9 M
Phenanthrene	<15 µg/kg	TM218		38.7 M	309 M	445 M	2040 M	215 M	347 M
Anthracene	<16 µg/kg	TM218		<16 M	81.6 M	111 M	562 M	178 M	108 M
Fluoranthene	<17 µg/kg	TM218		77.3 M	638 M	554 M	5100 M	668 M	1110 M
Pyrene	<15 µg/kg	TM218		62.3 M	521 M	509 M	3860 M	537 M	968 M
Benz(a)anthracene	<14 µg/kg	TM218		47.5 M	352 M	378 M	2540 M	440 M	616 M
Chrysene	<10 µg/kg	TM218		52.5 M	382 M	438 M	2570 M	631 M	702 M
Benzo(b)fluoranthene	<15 µg/kg	TM218		72.4 M	541 M	617 M	3860 M	659 M	1050 M
Benzo(k)fluoranthene	<14 µg/kg	TM218		22.4 M	167 M	180 M	1140 M	236 M	316 M
Benzo(a)pyrene	<15 µg/kg	TM218		38.4 M	324 M	323 M	2230 M	354 M	474 M
Indeno(1,2,3-cd)pyrene	<18 µg/kg	TM218		34.6 M	288 M	227 M	1910 M	327 M	501 M
Dibenzo(a,h)anthracene	<23 µg/kg	TM218		<23 M	64 M	43.6 M	439 M	78.5 M	124 M
Benzo(g,h,i)perylene	<24 µg/kg	TM218		33.8 M	279 M	230 M	1700 M	278 M	453 M
PAH, Total Detected USEPA 16	<118 µg/kg	TM218		493	4200	4340	29200	4850	7040

Validated

CERTIFICATE OF ANALYSIS

SDG:	210331-78	**Client Reference:**	P18-669	**Report Number:**	593957
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	593510

PAH by GCMS

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	R102-7	R106-1	R106-2	R127-1	R127-2	R127-3
			Depth (m)	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	29/03/2021	29/03/2021	29/03/2021	29/03/2021	29/03/2021	29/03/2021
			Sample Time	.	.	.	.	.	.
			Date Received	31/03/2021	31/03/2021	31/03/2021	31/03/2021	31/03/2021	31/03/2021
			SDG Ref	210331-78	210331-78	210331-78	210331-78	210331-78	210331-78
			Lab Sample No.(s)	24004269	24004283	24004293	24004353	24004362	24004368
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		88.4	86.5	91.1	87.9	88.3	86.7
Acenaphthene-d10 % recovery**	%	TM218		88.8	92	93.5	93.5	85.9	91.3
Phenanthrene-d10 % recovery**	%	TM218		89.6	94.4	91.3	98.8	80.6	85.7
Chrysene-d12 % recovery**	%	TM218		83.6	95.9	85	85	71.9	85.1
Perylene-d12 % recovery**	%	TM218		71.5	95.9	79.5	89.5	76.8	81.5
Naphthalene	<9 µg/kg	TM218		126 M	591 M	203 M	237 M	124 M	171 M
Acenaphthylene	<12 µg/kg	TM218		18.2 M	903 M	183 M	218 M	<60 M	119 M
Acenaphthene	<8 µg/kg	TM218		36.1 M	57.9 M	17.4 M	56.5 M	<40 M	<40 M
Fluorene	<10 µg/kg	TM218		64 M	336 M	103 M	295 M	<50 M	64.9 M
Phenanthrene	<15 µg/kg	TM218		430 M	3480 M	1150 M	1860 M	376 M	487 M
Anthracene	<16 µg/kg	TM218		109 M	1100 M	265 M	378 M	104 M	144 M
Fluoranthene	<17 µg/kg	TM218		755 M	9330 M	2500 M	2380 M	785 M	1010 M
Pyrene	<15 µg/kg	TM218		750 M	6780 M	1770 M	1700 M	675 M	852 M
Benz(a)anthracene	<14 µg/kg	TM218		817 M	4470 M	1020 M	986 M	448 M	556 M
Chrysene	<10 µg/kg	TM218		949 M	4290 M	1050 M	706 M	479 M	682 M
Benzo(b)fluoranthene	<15 µg/kg	TM218		1790 M	6730 M	1550 M	1060 M	748 M	919 M
Benzo(k)fluoranthene	<14 µg/kg	TM218		487 M	2170 M	482 M	369 M	242 M	301 M
Benzo(a)pyrene	<15 µg/kg	TM218		974 M	3850 M	928 M	840 M	422 M	543 M
Indeno(1,2,3-cd)pyrene	<18 µg/kg	TM218		743 M	3420 M	734 M	716 M	436 M	517 M
Dibenzo(a,h)anthracene	<23 µg/kg	TM218		120 M	784 M	163 M	127 M	<115 M	<115 M
Benzo(g,h,i)perylene	<24 µg/kg	TM218		656 M	2960 M	709 M	662 M	389 M	504 M
PAH, Total Detected USEPA 16	<118 µg/kg	TM218		8820	51300	12800	12600	5230	6870

Validated

CERTIFICATE OF ANALYSIS

SDG:	210331-78	**Client Reference:**	P18-669	**Report Number:**	593957
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	593510

PAH by GCMS

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
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**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	R-135-1	R-135-2	W-89-1	W-208-4-1	W-208-4-2	W-208-4-3
			Depth (m)	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	29/03/2021	29/03/2021	29/03/2021	29/03/2021	29/03/2021	29/03/2021
			Sample Time	.	.	.	.	.	.
			Date Received	31/03/2021	31/03/2021	31/03/2021	31/03/2021	31/03/2021	31/03/2021
			SDG Ref	210331-78	210331-78	210331-78	210331-78	210331-78	210331-78
			Lab Sample No.(s)	24004298	24004304	24004326	24004234	24004311	24004335
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		91.4	89.4	85.5	89.1	83.6	89
Acenaphthene-d10 % recovery**	%	TM218		91.5	92.8	90.9	94.2	80.8	86.7
Phenanthrene-d10 % recovery**	%	TM218		88.6	94.8	93.6	96.7	79.8	77.4
Chrysene-d12 % recovery**	%	TM218		75.4	100	106	99.8	70.1	78
Perylene-d12 % recovery**	%	TM218		80.2	90.4	108	97	77.2	82.9
Naphthalene	<9 µg/kg	TM218		1960 M	3550 M	885 M	267 M	134 M	420 M
Acenaphthylene	<12 µg/kg	TM218		386 M	1370 M	<60 M	157 M	60.3 M	1150 M
Acenaphthene	<8 µg/kg	TM218		170 M	375 M	2400 M	43.2 M	26.4 M	74.2 M
Fluorene	<10 µg/kg	TM218		396 M	1150 M	1140 M	101 M	54.2 M	890 M
Phenanthrene	<15 µg/kg	TM218		2930 M	8420 M	13900 M	703 M	401 M	6020 M
Anthracene	<16 µg/kg	TM218		579 M	1890 M	3830 M	191 M	113 M	916 M
Fluoranthene	<17 µg/kg	TM218		3710 M	13000 M	27900 M	1460 M	790 M	13400 M
Pyrene	<15 µg/kg	TM218		2810 M	9440 M	28800 M	1130 M	624 M	9570 M
Benz(a)anthracene	<14 µg/kg	TM218		1550 M	5650 M	18600 M	773 M	353 M	5000 M
Chrysene	<10 µg/kg	TM218		1460 M	5740 M	18300 M	813 M	362 M	3380 M
Benzo(b)fluoranthene	<15 µg/kg	TM218		2380 M	7120 M	24400 M	1100 M	524 M	6240 M
Benzo(k)fluoranthene	<14 µg/kg	TM218		785 M	2230 M	9580 M	349 M	205 M	2080 M
Benzo(a)pyrene	<15 µg/kg	TM218		1280 M	4420 M	19700 M	632 M	296 M	3400 M
Indeno(1,2,3-cd)pyrene	<18 µg/kg	TM218		1220 M	3660 M	14700 M	543 M	279 M	3140 M
Dibenzo(a,h)anthracene	<23 µg/kg	TM218		181 M	793 M	2470 M	130 M	45.1 M	453 M
Benzo(g,h,i)perylene	<24 µg/kg	TM218		936 M	3090 M	12700 M	507 M	238 M	2080 M
PAH, Total Detected USEPA 16	<118 µg/kg	TM218		22700	71900	199000	8910	4510	58200

Validated

CERTIFICATE OF ANALYSIS

SDG:	210331-78	**Client Reference:**	P18-669	**Report Number:**	593957
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	593510

PAH by GCMS

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Customer Sample Ref.	W-208-4-4
Depth (m)	0.20 - 0.20
Sample Type	Soil/Solid (S)
Date Sampled	29/03/2021
Sample Time	.
Date Received	31/03/2021
SDG Ref	210331-78
Lab Sample No.(s)	24004343
AGS Reference	

Component	LOD/Units	Method	
Naphthalene-d8 % recovery**	%	TM218	85.9
Acenaphthene-d10 % recovery**	%	TM218	83.9
Phenanthrene-d10 % recovery**	%	TM218	80.5
Chrysene-d12 % recovery**	%	TM218	71.9
Perylene-d12 % recovery**	%	TM218	80.2
Naphthalene	<9 µg/kg	TM218	95.9 M
Acenaphthylene	<12 µg/kg	TM218	47 M
Acenaphthene	<8 µg/kg	TM218	16.3 M
Fluorene	<10 µg/kg	TM218	39.1 M
Phenanthrene	<15 µg/kg	TM218	294 M
Anthracene	<16 µg/kg	TM218	74.7 M
Fluoranthene	<17 µg/kg	TM218	540 M
Pyrene	<15 µg/kg	TM218	442 M
Benz(a)anthracene	<14 µg/kg	TM218	243 M
Chrysene	<10 µg/kg	TM218	255 M
Benzo(b)fluoranthene	<15 µg/kg	TM218	371 M
Benzo(k)fluoranthene	<14 µg/kg	TM218	141 M
Benzo(a)pyrene	<15 µg/kg	TM218	217 M
Indeno(1,2,3-cd)pyrene	<18 µg/kg	TM218	212 M
Dibenzo(a,h)anthracene	<23 µg/kg	TM218	37.9 M
Benzo(g,h,i)perylene	<24 µg/kg	TM218	195 M
PAH, Total Detected USEPA 16	<118 µg/kg	TM218	3220

Validated

CERTIFICATE OF ANALYSIS

SDG:	210331-78	**Client Reference:**	P18-669	**Report Number:**	593957
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	593510

TPH CWG (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	R101-1	R102-2	R102-3	R102-4	R102-5	R102-6
			Depth (m)	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	29/03/2021	29/03/2021	29/03/2021	29/03/2021	29/03/2021	29/03/2021
			Sample Time	.	.	.	.	.	.
			Date Received	31/03/2021	31/03/2021	31/03/2021	31/03/2021	31/03/2021	31/03/2021
			SDG Ref	210331-78	210331-78	210331-78	210331-78	210331-78	210331-78
			Lab Sample No.(s)	24004278	24004378	24004243	24004251	24004257	24004264
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		103	83.6	115	78.6	85.4	115
Aliphatics >C5-C6	<10 µg/kg	TM089		<10	<10	<10	<10	<10	<10
Aliphatics >C6-C8	<10 µg/kg	TM089		<10	<10	<10	<10	<10	<10
Aliphatics >C8-C10	<10 µg/kg	TM089		<10	<10	<10	<10	<10	<10
Aliphatics >C10-C12	<1000 µg/kg	TM414		<1000	<1000	<1000	<1000	<1000	<1000
Aliphatics >C12-C16	<1000 µg/kg	TM414		<1000	1520	1090	1030	<1000	2340
Aliphatics >C16-C21	<1000 µg/kg	TM414		<1000	7500	16500	10800	3490	17500
Aliphatics >C21-C35	<1000 µg/kg	TM414		<1000	34100	54400	35500	21000	67300
Aliphatics >C35-C44	<1000 µg/kg	TM414		<1000	9290	7570	7390	5810	18700
Total Aliphatics >C10-C44	<5000 µg/kg	TM414		<5000	52600	79700	54900	30800	106000
Total Aliphatics & Aromatics >C10-C44	<10000 µg/kg	TM414		<10000	78700	119000	148000	51300	376000
Aromatics >EC5-EC7	<10 µg/kg	TM089		<10	<10	<10	<10	<10	<10
Aromatics >EC7-EC8	<10 µg/kg	TM089		<10	<10	<10	<10	<10	<10
Aromatics >EC8-EC10	<10 µg/kg	TM089		<10	<10	<10	<10	<10	<10
Aromatics > EC10-EC12	<1000 µg/kg	TM414		<1000	<1000	<1000	<1000	<1000	<1000
Aromatics > EC12-EC16	<1000 µg/kg	TM414		<1000	<1000	<1000	1830	<1000	1020
Aromatics > EC16-EC21	<1000 µg/kg	TM414		<1000	2760	4650	20500	1660	28500
Aromatics > EC21-EC35	<1000 µg/kg	TM414		1410	20700	28400	63400	16300	215000
Aromatics >EC35-EC44	<1000 µg/kg	TM414		<1000	2460	6140	7390	2610	26300
Aromatics > EC40-EC44	<1000 µg/kg	TM414		<1000	<1000	4100	1710	<1000	3640
Total Aromatics > EC10-EC44	<5000 µg/kg	TM414		<5000	26100	39700	93600	20500	271000
Total Aliphatics & Aromatics >C5-C44	<10000 µg/kg	TM414		<10000	78700	119000	148000	51300	376000
Total Aliphatics >C5-C10	<50 µg/kg	TM089		<50	<50	<50	<50	<50	<50
Total Aromatics >EC5-EC10	<50 µg/kg	TM089		<50	<50	<50	<50	<50	<50
GRO >C5-C10	<20 µg/kg	TM089		<20	<20	<20	<20	<20	<20

Validated

CERTIFICATE OF ANALYSIS

SDG:	210331-78	**Client Reference:**	P18-669	**Report Number:**	593957
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	593510

TPH CWG (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	R102-7	R106-1	R106-2	R127-1	R127-2	R127-3
			Depth (m)	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	29/03/2021	29/03/2021	29/03/2021	29/03/2021	29/03/2021	29/03/2021
			Sample Time	.	.	.	.	.	.
			Date Received	31/03/2021	31/03/2021	31/03/2021	31/03/2021	31/03/2021	31/03/2021
			SDG Ref	210331-78	210331-78	210331-78	210331-78	210331-78	210331-78
			Lab Sample No.(s)	24004269	24004283	24004293	24004353	24004362	24004368
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		96.5	58.4 4	79.1	78.5	94.5	92.2
Aliphatics >C5-C6	<10 µg/kg	TM089		<10	<10 4	<10	<10	<10	12.5
Aliphatics >C6-C8	<10 µg/kg	TM089		<10	<10 4	<10	<10	<10	18.2
Aliphatics >C8-C10	<10 µg/kg	TM089		<10	<10 4	<10	<10	<10	18.2
Aliphatics >C10-C12	<1000 µg/kg	TM414		<1000	<1000	<1000	<1000	<1000	<1000
Aliphatics >C12-C16	<1000 µg/kg	TM414		<1000	<1000	<1000	2350	1650	1660
Aliphatics >C16-C21	<1000 µg/kg	TM414		15400	2340	1010	11000	11800	7750
Aliphatics >C21-C35	<1000 µg/kg	TM414		48200	16800	12500	63800	71300	45800
Aliphatics >C35-C44	<1000 µg/kg	TM414		8960	3200	2470	32900	30200	25000
Total Aliphatics >C10-C44	<5000 µg/kg	TM414		73600	22700	16100	110000	115000	80200
Total Aliphatics & Aromatics >C10-C44	<10000 µg/kg	TM414		98800	108000	237000	150000	144000	137000
Aromatics >EC5-EC7	<10 µg/kg	TM089		<10	<10 4	<10	<10	<10	<10
Aromatics >EC7-EC8	<10 µg/kg	TM089		<10	<10 4	<10	<10	<10	<10
Aromatics >EC8-EC10	<10 µg/kg	TM089		<10	<10 4	<10	<10	<10	12.5
Aromatics > EC10-EC12	<1000 µg/kg	TM414		<1000	<1000	<1000	<1000	<1000	<1000
Aromatics > EC12-EC16	<1000 µg/kg	TM414		<1000	<1000	2620	<1000	<1000	<1000
Aromatics > EC16-EC21	<1000 µg/kg	TM414		3110	16200	72900	4410	2760	9710
Aromatics > EC21-EC35	<1000 µg/kg	TM414		20900	57900	122000	31900	24700	42500
Aromatics >EC35-EC44	<1000 µg/kg	TM414		<1000	9950	22800	2470	1480	4470
Aromatics > EC40-EC44	<1000 µg/kg	TM414		<1000	1490	4530	<1000	<1000	<1000
Total Aromatics > EC10-EC44	<5000 µg/kg	TM414		25200	85200	221000	39400	29200	57200
Total Aliphatics & Aromatics >C5-C44	<10000 µg/kg	TM414		98800	108000	237000	150000	144000	137000
Total Aliphatics >C5-C10	<50 µg/kg	TM089		<50	<50 4	<50	<50	<50	<50
Total Aromatics >EC5-EC10	<50 µg/kg	TM089		<50	<50 4	<50	<50	<50	<50
GRO >C5-C10	<20 µg/kg	TM089		<20	<20 4	<20	<20	<20	<20

Validated

CERTIFICATE OF ANALYSIS

SDG:	210331-78	**Client Reference:**	P18-669	**Report Number:**	593957
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	593510

TPH CWG (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	R-135-1	R-135-2	W-89-1	W-208-4-1	W-208-4-2	W-208-4-3
			Depth (m)	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	29/03/2021	29/03/2021	29/03/2021	29/03/2021	29/03/2021	29/03/2021
			Sample Time	.	.	.	.	.	.
			Date Received	31/03/2021	31/03/2021	31/03/2021	31/03/2021	31/03/2021	31/03/2021
			SDG Ref	210331-78	210331-78	210331-78	210331-78	210331-78	210331-78
			Lab Sample No.(s)	24004298	24004304	24004326	24004234	24004311	24004335
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		24.4 4	11.8 4	78.4	70.5	86.4	108
Aliphatics >C5-C6	<10 µg/kg	TM089		<10 4	<10 4	<10	<10	<10	<10
Aliphatics >C6-C8	<10 µg/kg	TM089		<10 4	<10 4	<10	<10	<10	<10
Aliphatics >C8-C10	<10 µg/kg	TM089		<10 4	<10 4	<10	<10	<10	<10
Aliphatics >C10-C12	<1000 µg/kg	TM414		<1000	<1000	<1000	<1000	<1000	<1000
Aliphatics >C12-C16	<1000 µg/kg	TM414		4440	2060	1540	2180	1250	1990
Aliphatics >C16-C21	<1000 µg/kg	TM414		8140	6890	36800	9990	6730	8100
Aliphatics >C21-C35	<1000 µg/kg	TM414		27400	36500	1450000	51600	41400	53800
Aliphatics >C35-C44	<1000 µg/kg	TM414		6410	8580	333000	11100	31400	19100
Total Aliphatics >C10-C44	<5000 µg/kg	TM414		47100	54200	1820000	74900	80800	83000
Total Aliphatics & Aromatics >C10-C44	<10000 µg/kg	TM414		143000	160000	2240000	94500	104000	107000
Aromatics >EC5-EC7	<10 µg/kg	TM089		<10 4	<10 4	<10	<10	<10	<10
Aromatics >EC7-EC8	<10 µg/kg	TM089		<10 4	<10 4	<10	<10	<10	<10
Aromatics >EC8-EC10	<10 µg/kg	TM089		<10 4	<10 4	<10	<10	<10	<10
Aromatics > EC10-EC12	<1000 µg/kg	TM414		2390	2710	<1000	<1000	<1000	<1000
Aromatics > EC12-EC16	<1000 µg/kg	TM414		7490	4220	1900	<1000	<1000	<1000
Aromatics > EC16-EC21	<1000 µg/kg	TM414		28300	23600	19300	3040	4320	3280
Aromatics > EC21-EC35	<1000 µg/kg	TM414		55200	67100	381000	15200	17200	18400
Aromatics >EC35-EC44	<1000 µg/kg	TM414		2760	8330	14600	<1000	1510	1510
Aromatics > EC40-EC44	<1000 µg/kg	TM414		<1000	<1000	1070	<1000	<1000	<1000
Total Aromatics > EC10-EC44	<5000 µg/kg	TM414		96200	106000	417000	19600	23300	23600
Total Aliphatics & Aromatics >C5-C44	<10000 µg/kg	TM414		143000	160000	2240000	94500	104000	107000
Total Aliphatics >C5-C10	<50 µg/kg	TM089		<50 4	<50 4	<50	<50	<50	<50
Total Aromatics >EC5-EC10	<50 µg/kg	TM089		<50 4	<50 4	<50	<50	<50	<50
GRO >C5-C10	<20 µg/kg	TM089		<20 4	<20 4	<20	<20	<20	<20

Validated

CERTIFICATE OF ANALYSIS

SDG:	210331-78	**Client Reference:**	P18-669	**Report Number:**	593957
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	593510

TPH CWG (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Customer Sample Ref.	W-208-4-4
Depth (m)	0.20 - 0.20
Sample Type	Soil/Solid (S)
Date Sampled	29/03/2021
Sample Time	.
Date Received	31/03/2021
SDG Ref	210331-78
Lab Sample No.(s)	24004343
AGS Reference	

Component	LOD/Units	Method	
GRO Surrogate % recovery**	%	TM089	82.8
Aliphatics >C5-C6	<10 µg/kg	TM089	<10
Aliphatics >C6-C8	<10 µg/kg	TM089	<10
Aliphatics >C8-C10	<10 µg/kg	TM089	<10
Aliphatics >C10-C12	<1000 µg/kg	TM414	<1000
Aliphatics >C12-C16	<1000 µg/kg	TM414	<1000
Aliphatics >C16-C21	<1000 µg/kg	TM414	3960
Aliphatics >C21-C35	<1000 µg/kg	TM414	27300
Aliphatics >C35-C44	<1000 µg/kg	TM414	8040
Total Aliphatics >C10-C44	<5000 µg/kg	TM414	39400
Total Aliphatics & Aromatics >C10-C44	<10000 µg/kg	TM414	53400
Aromatics >EC5-EC7	<10 µg/kg	TM089	<10
Aromatics >EC7-EC8	<10 µg/kg	TM089	<10
Aromatics >EC8-EC10	<10 µg/kg	TM089	<10
Aromatics > EC10-EC12	<1000 µg/kg	TM414	<1000
Aromatics > EC12-EC16	<1000 µg/kg	TM414	<1000
Aromatics > EC16-EC21	<1000 µg/kg	TM414	1420
Aromatics > EC21-EC35	<1000 µg/kg	TM414	11600
Aromatics >EC35-EC44	<1000 µg/kg	TM414	<1000
Aromatics > EC40-EC44	<1000 µg/kg	TM414	<1000
Total Aromatics > EC10-EC44	<5000 µg/kg	TM414	14000
Total Aliphatics & Aromatics >C5-C44	<10000 µg/kg	TM414	53400
Total Aliphatics >C5-C10	<50 µg/kg	TM089	<50
Total Aromatics >EC5-EC10	<50 µg/kg	TM089	<50
GRO >C5-C10	<20 µg/kg	TM089	<20

CERTIFICATE OF ANALYSIS

SDG:	210331-78	**Client Reference:**	P18-669	**Report Number:**	593957
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	593510

VOC MS (S)

Results Legend	
#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	R101-1	R102-2	R102-3	R102-4	R102-5	R102-6
			Depth (m)	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	29/03/2021	29/03/2021	29/03/2021	29/03/2021	29/03/2021	29/03/2021
			Sample Time	.	.	.	.	.	.
			Date Received	31/03/2021	31/03/2021	31/03/2021	31/03/2021	31/03/2021	31/03/2021
			SDG Ref	210331-78	210331-78	210331-78	210331-78	210331-78	210331-78
			Lab Sample No.(s)	24004278	24004378	24004243	24004251	24004257	24004264
			AGS Reference						
Dibromofluoromethane**	%	TM116		107	113	110	107	107	106
Toluene-d8**	%	TM116		97.5	95.9	94.3	94.6	96	94.7
4-Bromofluorobenzene**	%	TM116		103	99.1	103	95.8	102	106
Methyl Tertiary Butyl Ether	<10 µg/kg	TM116		<200 M	<200 M	<200 M	<200 M	<200 M	<200 M
Benzene	<9 µg/kg	TM116		<180 M	<180 M	<180 M	<180 M	<180 M	<180 M
Toluene	<7 µg/kg	TM116		<140 M	<140 M	<140 M	<140 M	<140 M	<140 M
Ethylbenzene	<4 µg/kg	TM116		<80 M	<80 M	<80 M	<80 M	<80 M	<80 M
p/m-Xylene	<10 µg/kg	TM116		<200 #	<200 #	<200 #	<200 #	<200 #	<200 #
o-Xylene	<10 µg/kg	TM116		<200 M	<200 M	<200 M	<200 M	<200 M	<200 M
Naphthalene	<13 µg/kg	TM116		<260 M	<260 M	<260 M	<260 M	<260 M	<260 M
Sum of Detected Xylenes	<0.02 mg/kg	TM116		<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Sum of BTEX	<40 µg/kg	TM116		<800	<800	<800	<800	<800	<800

Validated

CERTIFICATE OF ANALYSIS

SDG:	210331-78	**Client Reference:**	P18-669	**Report Number:**	593957
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	593510

VOC MS (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	R102-7	R106-1	R106-2	R127-1	R127-2	R127-3
			Depth (m)	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	29/03/2021	29/03/2021	29/03/2021	29/03/2021	29/03/2021	29/03/2021
			Sample Time	.	.	.	.	.	.
			Date Received	31/03/2021	31/03/2021	31/03/2021	31/03/2021	31/03/2021	31/03/2021
			SDG Ref	210331-78	210331-78	210331-78	210331-78	210331-78	210331-78
			Lab Sample No.(s)	24004269	24004283	24004293	24004353	24004362	24004368
			AGS Reference						
Dibromofluoromethane**	%	TM116		110	107	112	109	111	108
Toluene-d8**	%	TM116		96.7	94.8	98.2	95.3	96.9	95.8
4-Bromofluorobenzene**	%	TM116		98	106	100	101	109	96.8
Methyl Tertiary Butyl Ether	<10 µg/kg	TM116		<200 M	<200 M	<200 M	<200 M	<200 M	<200 M
Benzene	<9 µg/kg	TM116		<180 M	<180 M	<180 M	<180 M	<180 M	<180 M
Toluene	<7 µg/kg	TM116		<140 M	<140 M	<140 M	<140 M	<140 M	<140 M
Ethylbenzene	<4 µg/kg	TM116		<80 M	<80 M	<80 M	<80 M	<80 M	<80 M
p/m-Xylene	<10 µg/kg	TM116		<200 #	<200 #	<200 #	<200 #	<200 #	<200 #
o-Xylene	<10 µg/kg	TM116		<200 M	<200 M	<200 M	<200 M	<200 M	<200 M
Naphthalene	<13 µg/kg	TM116		<260 M	<260 M	<260 M	<260 M	<260 M	<260 M
Sum of Detected Xylenes	<0.02 mg/kg	TM116		<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Sum of BTEX	<40 µg/kg	TM116		<800	<800	<800	<800	<800	<800

CERTIFICATE OF ANALYSIS

SDG:	210331-78	**Client Reference:**	P18-669	**Report Number:**	593957
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	593510

VOC MS (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	R-135-1	R-135-2	W-89-1	W-208-4-1	W-208-4-2	W-208-4-3
			Depth (m)	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	29/03/2021	29/03/2021	29/03/2021	29/03/2021	29/03/2021	29/03/2021
			Sample Time	.	.	.	.	.	.
			Date Received	31/03/2021	31/03/2021	31/03/2021	31/03/2021	31/03/2021	31/03/2021
			SDG Ref	210331-78	210331-78	210331-78	210331-78	210331-78	210331-78
			Lab Sample No.(s)	24004298	24004304	24004326	24004234	24004311	24004335
			AGS Reference						
Dibromofluoromethane**	%	TM116		87	84.3	107	107	109	111
Toluene-d8**	%	TM116		87.6	83.4	95.4	97.7	98.7	96.1
4-Bromofluorobenzene**	%	TM116		80.4	76.3	102	102	101	101
Methyl Tertiary Butyl Ether	<10 µg/kg	TM116		<200 M	<200 M	<200 M	<200 M	<200 M	<200 M
Benzene	<9 µg/kg	TM116		<180 M	<180 M	<180 M	<180 M	<180 M	<180 M
Toluene	<7 µg/kg	TM116		<140 M	<140 M	<140 M	<140 M	<140 M	<140 M
Ethylbenzene	<4 µg/kg	TM116		<80 M	<80 M	<80 M	<80 M	<80 M	<80 M
p/m-Xylene	<10 µg/kg	TM116		<200 #	<200 #	<200 #	<200 #	<200 #	<200 #
o-Xylene	<10 µg/kg	TM116		<200 M	<200 M	<200 M	<200 M	<200 M	<200 M
Naphthalene	<13 µg/kg	TM116		817 M	639 M	<260 M	<260 M	<260 M	<260 M
Sum of Detected Xylenes	<0.02 mg/kg	TM116		<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Sum of BTEX	<40 µg/kg	TM116		<800	<800	<800	<800	<800	<800

CERTIFICATE OF ANALYSIS

SDG:	210331-78	**Client Reference:**	P18-669	**Report Number:**	593957
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	593510

VOC MS (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Customer Sample Ref.	W-208-4-4
Depth (m)	0.20 - 0.20
Sample Type	Soil/Solid (S)
Date Sampled	29/03/2021
Sample Time	.
Date Received	31/03/2021
SDG Ref	210331-78
Lab Sample No.(s)	24004343
AGS Reference	

Component	LOD/Units	Method	
Dibromofluoromethane**	%	TM116	111
Toluene-d8**	%	TM116	96.6
4-Bromofluorobenzene**	%	TM116	101
Methyl Tertiary Butyl Ether	<10 µg/kg	TM116	<200 M
Benzene	<9 µg/kg	TM116	<180 M
Toluene	<7 µg/kg	TM116	<140 M
Ethylbenzene	<4 µg/kg	TM116	<80 M
p/m-Xylene	<10 µg/kg	TM116	<200 #
o-Xylene	<10 µg/kg	TM116	<200 M
Naphthalene	<13 µg/kg	TM116	<260 M
Sum of Detected Xylenes	<0.02 mg/kg	TM116	<0.4
Sum of BTEX	<40 µg/kg	TM116	<800

CERTIFICATE OF ANALYSIS

SDG:	210331-78	**Client Reference:**	P18-669	**Report Number:**	593957
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	593510

Asbestos Identification - Solid Samples

Results Legend

#	ISO17025 accredited.
M	*m*CERTS accredited.
*	Subcontracted test.
(F)	Trigger breach confirmed
1-5&+$@	Sample deviation (see appendix)

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthophyllite	Fibrous Tremolite	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	R101-1 0.20 - 0.20 SOLID 29/03/2021 00:00:00 31/03/2021 05:00:00 210331-78 24004278 TM048	08/04/2021	Barbara Urbanek-Walsh	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	R102-2 0.20 - 0.20 SOLID 29/03/2021 00:00:00 31/03/2021 05:00:00 210331-78 24004378 TM048	08/04/2021	Barbara Urbanek-Walsh	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	R102-4 0.20 - 0.20 SOLID 29/03/2021 00:00:00 31/03/2021 05:00:00 210331-78 24004251 TM048	07/04/2021	Barbara Urbanek-Walsh	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	R102-6 0.20 - 0.20 SOLID 29/03/2021 00:00:00 31/03/2021 05:00:00 210331-78 24004264 TM048	07/04/2021	Marcin Magdziarek	Loose fibres in soil	Trace (#)	Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	R106-2 0.20 - 0.20 SOLID 29/03/2021 00:00:00 31/03/2021 05:00:00 210331-78 24004293 TM048	07/04/2021	Barbara Urbanek-Walsh	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	R127-1 0.20 - 0.20 SOLID 29/03/2021 00:00:00 31/03/2021 05:00:00 210331-78 24004353 TM048	07.04.21	Emily Anderton	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	R127-3 0.20 - 0.20 SOLID 29/03/2021 00:00:00 31/03/2021 05:00:00 210331-78 24004368 TM048	07/04/2021	Barbara Urbanek-Walsh	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	R-135-2 0.20 - 0.20 SOLID 29/03/2021 00:00:00 31/03/2021 05:00:00 210331-78 24004304 TM048	08/04/2021	Marcin Magdziarek	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected

Validated

CERTIFICATE OF ANALYSIS

SDG:	210331-78	**Client Reference:**	P18-669	**Report Number:**	593957
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	593510

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthophyllite	Fibrous Tremolite	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	W-208-4-1 0.20 - 0.20 SOLID 29/03/2021 00:00:00 31/03/2021 05:00:00 210331-78 24004234 TM048	07.04.21	Emily Anderton	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	W-208-4-3 0.20 - 0.20 SOLID 29/03/2021 00:00:00 31/03/2021 05:00:00 210331-78 24004335 TM048	07.04.21	Emily Anderton	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected

CERTIFICATE OF ANALYSIS

SDG:	210331-78	**Client Reference:**	P18-669	**Report Number:**	593957
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	593510

Asbestos Quantification - Full

Results Legend

#	ISO17025 accredited.
M	*m*CERTS accredited.
*	Subcontracted test.
(F)	Trigger breach confirmed
1-5&+$@	Sample deviation (see appendix)

		Additional Asbestos Components	Analysts Comments	Asbestos Quantification - Gravimetric - %	Asbestos Quantification - PCOM	Asbestos Quantification - Total - %
Cust. Sample Ref.	R102-6	None (#)	N/A	<0.001 (#)	<0.001 (#)	<0.001 (#)
Depth (m)	0.20 - 0.20					
Sample Type	SOLID					
Date Sampled	29/03/2021 00:00:00					
Date Received	31/03/2021 05:00:00					
SDG	210331-78					
Original Sample	24004264					
Method Number	TM304					

Table of Results - Appendix

Method No	Reference	Description
PM024	Modified BS 1377	Soil preparation including homogenisation, moisture screens of soils for Asbestos Containing Material
TM024	Method 4500A & B, AWWA/APHA, 20th Ed., 1999	Determination of Exchangeable Ammonium and Ammoniacal Nitrogen as N by titration on solids
TM048	HSG 248, Asbestos: The analysts' guide for sampling, analysis and clearance procedures	Identification of Asbestos in Bulk Material
TM062 (S)	National Grid Property Holdings Methods for the Collection & Analysis of Samples from National Grid Sites version 1 Sec 3.9	Determination of Phenols in Soils by HPLC
TM089	Modified: US EPA Methods 8020 & 602	Determination of Gasoline Range Hydrocarbons (GRO) by Headspace GC-FID (C4-C12)
TM116	Modified: US EPA Method 8260, 8120, 8020, 624, 610 & 602	Determination of Volatile Organic Compounds by Headspace / GC-MS
TM132	In - house Method	ELTRA CS800 Operators Guide
TM133	BS 1377: Part 3 1990;BS 6068-2.5	Determination of pH in Soil and Water using the GLpH pH Meter
TM153	Method 4500A,B,C, I, M AWWA/APHA, 20th Ed., 1999	Determination of Total Cyanide, Free (Easily Liberatable) Cyanide and Thiocyanate using the Skalar SANS+ System Segmented Flow Analyser
TM181	US EPA Method 6010B	Determination of Routine Metals in Soil by iCap 6500 Duo ICP-OES
TM218	Shaker extraction - EPA method 3546.	The determination of PAH in soil samples by GC-MS
TM304	HSE Contract research Report no 83/1996	Asbestos Quantification in Soil: Fibres identified by morphology only
TM414	Analysis of Petroleum Hydrocarbons in Environmental Media – Total Petroleum Hydrocarbon Criteria	Determination of Speciated Extractable Petroleum Hydrocarbons in Soils by GCxGC-FID

NA = not applicable.

Chemical testing (unless subcontracted) performed at ALS Life Sciences Ltd Hawarden (Method codes TM) or ALS Life Sciences Ltd Aberdeen (Method codes S).

CERTIFICATE OF ANALYSIS

SDG:	210331-78	**Client Reference:**	P18-669	**Report Number:**	593957
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	593510

Test Completion Dates

Lab Sample No(s)	24004278	24004378	24004243	24004251	24004257	24004264	24004269	24004283	24004293	24004353
Customer Sample Ref.	R101-1	R102-2	R102-3	R102-4	R102-5	R102-6	R102-7	R106-1	R106-2	R127-1
AGS Ref.										
Depth	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
Ammonium Soil by Titration	08-Apr-2021	08-Apr-2021	08-Apr-2021	08-Apr-2021	08-Apr-2021	08-Apr-2021	08-Apr-2021	08-Apr-2021	08-Apr-2021	08-Apr-2021
Asbestos ID in Solid Samples	08-Apr-2021	08-Apr-2021		07-Apr-2021		07-Apr-2021			07-Apr-2021	07-Apr-2021
Asbestos Quantification - Full						14-Apr-2021				
Cyanide Comp/Free/Total/Thiocyanate	08-Apr-2021	08-Apr-2021	08-Apr-2021	08-Apr-2021	08-Apr-2021	08-Apr-2021	08-Apr-2021	08-Apr-2021	08-Apr-2021	08-Apr-2021
EPH CWG GC (S)	08-Apr-2021	07-Apr-2021	06-Apr-2021	06-Apr-2021	07-Apr-2021	07-Apr-2021	07-Apr-2021	07-Apr-2021	07-Apr-2021	07-Apr-2021
GRO by GC-FID (S)	06-Apr-2021	06-Apr-2021	06-Apr-2021	06-Apr-2021	06-Apr-2021	06-Apr-2021	06-Apr-2021	07-Apr-2021	06-Apr-2021	01-Apr-2021
Metals in solid samples by OES	08-Apr-2021	08-Apr-2021	08-Apr-2021	08-Apr-2021	07-Apr-2021	08-Apr-2021	08-Apr-2021	08-Apr-2021	08-Apr-2021	08-Apr-2021
PAH by GCMS	07-Apr-2021	07-Apr-2021	08-Apr-2021	07-Apr-2021	07-Apr-2021	07-Apr-2021	08-Apr-2021	07-Apr-2021	06-Apr-2021	06-Apr-2021
pH	06-Apr-2021	06-Apr-2021	01-Apr-2021	07-Apr-2021	01-Apr-2021	06-Apr-2021	01-Apr-2021	01-Apr-2021	06-Apr-2021	07-Apr-2021
Phenols by HPLC (S)	08-Apr-2021	08-Apr-2021	08-Apr-2021	08-Apr-2021	08-Apr-2021	08-Apr-2021	08-Apr-2021	08-Apr-2021	01-Apr-2021	01-Apr-2021
Sample description	01-Apr-2021	31-Mar-2021	31-Mar-2021	31-Mar-2021	31-Mar-2021	31-Mar-2021	31-Mar-2021	31-Mar-2021	31-Mar-2021	31-Mar-2021
Total Organic Carbon	09-Apr-2021	09-Apr-2021	09-Apr-2021	09-Apr-2021	09-Apr-2021	09-Apr-2021	09-Apr-2021	09-Apr-2021	08-Apr-2021	09-Apr-2021
TPH CWG GC (S)	08-Apr-2021	07-Apr-2021	06-Apr-2021	06-Apr-2021	07-Apr-2021	07-Apr-2021	07-Apr-2021	07-Apr-2021	07-Apr-2021	07-Apr-2021
VOC MS (S)	06-Apr-2021	01-Apr-2021	01-Apr-2021	01-Apr-2021	01-Apr-2021	01-Apr-2021	01-Apr-2021	01-Apr-2021	01-Apr-2021	01-Apr-2021

Lab Sample No(s)	24004362	24004368	24004298	24004304	24004326	24004234	24004311	24004335	24004343
Customer Sample Ref.	R127-2	R127-3	R-135-1	R-135-2	W-89-1	W-208-4-1	W-208-4-2	W-208-4-3	W-208-4-4
AGS Ref.									
Depth	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
Ammonium Soil by Titration	08-Apr-2021	08-Apr-2021	08-Apr-2021	08-Apr-2021	08-Apr-2021	08-Apr-2021	08-Apr-2021	08-Apr-2021	08-Apr-2021
Asbestos ID in Solid Samples		07-Apr-2021		08-Apr-2021		07-Apr-2021		07-Apr-2021	
Cyanide Comp/Free/Total/Thiocyanate	08-Apr-2021	08-Apr-2021	08-Apr-2021	08-Apr-2021	08-Apr-2021	08-Apr-2021	08-Apr-2021	08-Apr-2021	08-Apr-2021
EPH CWG GC (S)	07-Apr-2021	07-Apr-2021	07-Apr-2021	07-Apr-2021	07-Apr-2021	07-Apr-2021	07-Apr-2021	07-Apr-2021	07-Apr-2021
GRO by GC-FID (S)	01-Apr-2021	01-Apr-2021	07-Apr-2021	07-Apr-2021	06-Apr-2021	01-Apr-2021	01-Apr-2021	01-Apr-2021	01-Apr-2021
Metals in solid samples by OES	08-Apr-2021	08-Apr-2021	08-Apr-2021	08-Apr-2021	08-Apr-2021	08-Apr-2021	08-Apr-2021	08-Apr-2021	08-Apr-2021
PAH by GCMS	07-Apr-2021	07-Apr-2021	07-Apr-2021	07-Apr-2021	07-Apr-2021	07-Apr-2021	07-Apr-2021	07-Apr-2021	07-Apr-2021
pH	07-Apr-2021	06-Apr-2021	01-Apr-2021	06-Apr-2021	01-Apr-2021	07-Apr-2021	01-Apr-2021	06-Apr-2021	31-Mar-2021
Phenols by HPLC (S)	01-Apr-2021	01-Apr-2021	08-Apr-2021	08-Apr-2021	08-Apr-2021	01-Apr-2021	01-Apr-2021	01-Apr-2021	01-Apr-2021
Sample description	31-Mar-2021	31-Mar-2021	01-Apr-2021	01-Apr-2021	01-Apr-2021	31-Mar-2021	31-Mar-2021	31-Mar-2021	31-Mar-2021
Total Organic Carbon	09-Apr-2021	09-Apr-2021	08-Apr-2021	09-Apr-2021	08-Apr-2021	09-Apr-2021	09-Apr-2021	09-Apr-2021	09-Apr-2021
TPH CWG GC (S)	07-Apr-2021	07-Apr-2021	07-Apr-2021	07-Apr-2021	07-Apr-2021	07-Apr-2021	07-Apr-2021	07-Apr-2021	07-Apr-2021
VOC MS (S)	01-Apr-2021	01-Apr-2021	06-Apr-2021	06-Apr-2021	06-Apr-2021	01-Apr-2021	01-Apr-2021	01-Apr-2021	01-Apr-2021

Appendix General

1. Results are expressed on a dry weight basis (dried at 35ºC) for all soil analyses except for the following: NRA and CEN Leach tests, flash point LOI, pH, ammonium as NH4 by the BRE method, VOC TICs and SVOC TICs.

2. If sufficient sample is received a sub sample will be retained free of charge for 30 days after analysis is completed (e-mailed) for all sample types unless the sample is destroyed on testing. The prepared soil sub sample that is analysed for asbestos will be retained for a period of 6 months after the analysis date. All bulk samples will be retained for a period of 6 months after the analysis date. All samples received and not scheduled will be disposed of one month after the date of receipt unless we are instructed to the contrary. Once the initial period has expired, a storage charge will be applied for each month or part thereof until the client cancels the request for sample storage. ALS reserve the right to charge for samples received and stored but not analysed.

3. With respect to turnaround, we will always endeavour to meet client requirements wherever possible, but turnaround times cannot be absolutely guaranteed due to so many variables beyond our control.

4. We take responsibility for any test performed by sub-contractors (marked with an asterisk). We endeavour to use UKAS/MCERTS Accredited Laboratories, who either complete a quality questionnaire or are audited by ourselves. For some determinands there are no UKAS/MCERTS Accredited Laboratories, in this instance a laboratory with a known track record will be utilised.

5. If no separate volatile sample is supplied by the client, or if a headspace or sediment is present in the volatile sample, the integrity of the data may be compromised. This will be flagged up as an invalid VOC on the test schedule and the result marked as deviating on the test certificate.

6. NDP - No determination possible due to insufficient/unsuitable sample.

7. Results relate only to the items tested.

8. LoDs (Limit of Detection) for wet tests reported on a dry weight basis are not corrected for moisture content.

9. **Surrogate recoveries** - Surrogates are added to your sample to monitor recovery of the test requested. A % recovery is reported, results are not corrected for the recovery measured. Typical recoveries for organics tests are 70-130%. Recoveries in soils are affected by organic rich or clay rich matrices. Waters can be affected by remediation fluids or high amounts of sediment. Test results are only ever reported if all of the associated quality checks pass; it is assumed that all recoveries outside of the values above are due to matrix affect.

10. Stones/debris are not routinely removed. We always endeavour to take a representative sub sample from the received sample.

11. In certain circumstances the method detection limit may be elevated due to the sample being outside the calibration range. Other factors that may contribute to this include possible interferences. In both cases the sample would be diluted which would cause the method detection limit to be raised.

12. Mercury results quoted on soils will not include volatile mercury as the analysis is performed on a dried and crushed sample.

13. For leachate preparations other than Zero Headspace Extraction (ZHE) volatile loss may occur.

14. For the BSEN 12457-3 two batch process to allow the cumulative release to be calculated, the volume of the leachate produced is measured and filtered for all tests. We therefore cannot carry out any unfiltered analysis. The tests affected include volatiles GCFID/GCMS and all subcontracted analysis.

15. Analysis and identification of specific compounds using GCFID is by retention time only, and we routinely calibrate and quantify for benzene, toluene, ethylbenzenes and xylenes (BTEX). For total volatiles in the C5-C12 range, the total area of the chromatogram is integrated and expressed as ug/kg or ug/l. Although this analysis is commonly used for the quantification of gasoline range organics (GRO), the system will also detect other compounds such as chlorinated solvents, and this may lead to a falsely high result with respect to hydrocarbons only. It is not possible to specifically identify these non-hydrocarbons, as standards are not routinely run for any other compounds, and for more definitive identification, volatiles by GCMS should be utilised.

16. We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample. Other coarse granular material such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

17. **Tentatively Identified Compounds (TICs)** are non-target peaks in VOC and SVOC analysis. All non-target peaks detected with a concentration above the LoD are subjected to a mass spectral library search. Non-target peaks with a library search confidence of >75% are reported based on the best mass spectral library match. When a non-target peak with a library search confidence of <75% is detected it is reported as "mixed hydrocarbons". Non-target compounds identified from the scan data are semi-quantified relative to one of the deuterated internal standards, under the same chromatographic conditions as the target compounds. This result is reported as a semi-quantitative value and reported as Tentatively Identified Compounds (TICs). TICs are outside the scope of UKAS accreditation and are not moisture corrected.

18. **Sample Deviations**

If a sample is classed as deviated then the associated results may be compromised.

1	**Container with Headspace provided for volatiles analysis**
2	**Incorrect container received**
3	**Deviation from method**
4	**Matrix interference**
♦	**Sample holding time exceeded in laboratory**
@	**Sample holding time exceeded due to late arrival of instructions or samples**
§	**Sampled on date not provided**

19. **Asbestos**

When requested, the individual sub sample scheduled will be analysed in house for the presence of asbestos fibres and asbestos containing material by our documented in house method TM048 based on HSG 248 (2005), which is accredited to ISO17025. If a specific asbestos fibre type is not found this will be reported as "Not detected". If no asbestos fibre types are found all will be reported as "Not detected" and the sub sample analysed deemed to be clear of asbestos. If an asbestos fibre type is found it will be reported as detected (for each fibre type found). Testing can be carried out on asbestos positive samples, but, due to Health and Safety considerations, may be replaced by alternative tests or reported as No Determination Possible (NDP). The quantity of asbestos present is not determined unless specifically requested.

Identification of Asbestos in Bulk Materials & Soils

The results for identification of asbestos in bulk materials are obtained from supplied bulk materials which have been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

The results for identification of asbestos in soils are obtained from a homogenised sub sample which has been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

Asbestos Type	Common Name
Chrysotile	White Asbestos
Amosite	Brown Asbestos
Crocidolite	Blue Asbestos
Fibrous Actinolite	-
Fibrous Anthophyllite	-
Fibrous Tremolite	-

Visual Estimation Of Fibre Content

Estimation of fibre content is not permitted as part of our UKAS accredited test other than: - Trace - Where only one or two asbestos fibres were identified.

Respirable Fibres

Respirable fibres are defined as fibres of <3 µm diameter, longer than 5 µm and with aspect ratios of at least 3:1 that can be inhaled into the lower regions of the lung and are generally acknowledged to be most important predictor of hazard and risk for cancers of the lung.
Standing Committee of Analysts, *The Quantification of Asbestos in Soil (2017).*

Further guidance on typical asbestos fibre content of manufactured products can be found in HSG 264.

The identification of asbestos containing materials and soils falls within our schedule of tests for which we hold UKAS accreditation, however opinions, interpretations and all other information contained in the report are outside the scope of UKAS accreditation.

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Rodgers Leask
Office 225
2430/2440
Aztec West
Almondsbury
Bristol
BS32 4QA

Attention: Elliot Thomas

CERTIFICATE OF ANALYSIS

Date of report Generation:	14 April 2021
Customer:	Rodgers Leask
Sample Delivery Group (SDG):	210331-78
Your Reference:	P18-669
Location:	Llanwern
Report No:	593957

This report has been revised and directly supersedes 593510 in its entirety.

We received 19 samples on Wednesday March 31, 2021 and 19 of these samples were scheduled for analysis which was completed on Wednesday April 14, 2021. Accredited laboratory tests are defined within the report, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation.

Should this report require incorporation into client reports, it must be used in its entirety and not simply with the data sections alone.

Chemical testing (unless subcontracted) performed at ALS Life Sciences Ltd Hawarden (Method codes TM) or ALS Life Sciences Ltd Aberdeen (Method codes S).

All sample data is provided by the customer. The reported results relate to the sample supplied, and on the basis that this data is correct.
Incorrect sampling dates and/or sample information will affect the validity of results.
The customer is not permitted to reproduce this report except in full without the approval of the laboratory.

Approved By:

Sonia McWhan

Operations Manager

CERTIFICATE OF ANALYSIS

SDG:	210331-78	**Client Reference:**	P18-669	**Report Number:**	593957
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	593510

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
24004278	R101-1		0.20 - 0.20	29/03/2021
24004378	R102-2		0.20 - 0.20	29/03/2021
24004243	R102-3		0.20 - 0.20	29/03/2021
24004251	R102-4		0.20 - 0.20	29/03/2021
24004257	R102-5		0.20 - 0.20	29/03/2021
24004264	R102-6		0.20 - 0.20	29/03/2021
24004269	R102-7		0.20 - 0.20	29/03/2021
24004283	R106-1		0.20 - 0.20	29/03/2021
24004293	R106-2		0.20 - 0.20	29/03/2021
24004353	R127-1		0.20 - 0.20	29/03/2021
24004362	R127-2		0.20 - 0.20	29/03/2021
24004368	R127-3		0.20 - 0.20	29/03/2021
24004298	R-135-1		0.20 - 0.20	29/03/2021
24004304	R-135-2		0.20 - 0.20	29/03/2021
24004326	W-89-1		0.20 - 0.20	29/03/2021
24004234	W-208-4-1		0.20 - 0.20	29/03/2021
24004311	W-208-4-2		0.20 - 0.20	29/03/2021
24004335	W-208-4-3		0.20 - 0.20	29/03/2021
24004343	W-208-4-4		0.20 - 0.20	29/03/2021

Only received samples which have had analysis scheduled will be shown on the following pages.

Validated

CERTIFICATE OF ANALYSIS

SDG:	210331-78	**Client Reference:**	P18-669	**Report Number:**	593957
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	593510

Results Legend

X Test

N No Determination Possible

Sample Types -

S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

Lab Sample No(s)			24004278			24004378			24004243		24004251			24004257		24004264			24004269		24004283
Customer Sample Reference			R101-1			R102-2			R102-3		R102-4			R102-5		R102-6			R102-7		R106-1
AGS Reference																					
Depth (m)			0.20 - 0.20			0.20 - 0.20			0.20 - 0.20		0.20 - 0.20			0.20 - 0.20		0.20 - 0.20			0.20 - 0.20		0.20 - 0.20
Container			1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)
Sample Type			S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
Ammonium Soil by Titration	All	NDPs: 0 Tests: 19		X			X		X			X		X			X		X		X
Asbestos ID in Solid Samples	All	NDPs: 0 Tests: 10	X			X					X					X					
Asbestos Quantification - Full	All	NDPs: 0 Tests: 1														X					
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 19		X			X		X			X		X			X		X		X
EPH CWG GC (S)	All	NDPs: 0 Tests: 19		X			X		X			X		X			X		X		X
GRO by GC-FID (S)	All	NDPs: 0 Tests: 19			X			X		X			X		X			X		X	
Metals in solid samples by OES	All	NDPs: 0 Tests: 19		X			X		X			X		X			X		X		X
PAH by GCMS	All	NDPs: 0 Tests: 19		X			X		X			X		X			X		X		X
pH	All	NDPs: 0 Tests: 19		X			X		X			X		X			X		X		X
Phenols by HPLC (S)	All	NDPs: 0 Tests: 19		X			X		X			X		X			X		X		X
Sample description	All	NDPs: 0 Tests: 18		X			X		X			X		X			X		X		X
Total Organic Carbon	All	NDPs: 0 Tests: 19		X			X		X			X		X			X		X		X
TPH CWG GC (S)	All	NDPs: 0 Tests: 19		X			X		X			X		X			X		X		X
VOC MS (S)	All	NDPs: 0 Tests: 19			X			X		X			X		X			X		X	

24004234	W-208-4-1		0.20 - 0.20	250g Amber Jar (ALE210)	S	X			X	X		X	X	X	X	X	X	X					
				1kg TUB with Handle (ALE260)	S		X																
24004326	W-89-1		0.20 - 0.20	60g VOC (ALE215)	S						X												X
				250g Amber Jar (ALE210)	S	X			X	X		X	X	X	X	X	X	X					
24004304	R-135-2		0.20 - 0.20	60g VOC (ALE215)	S						X												X
				250g Amber Jar (ALE210)	S	X			X	X		X	X	X	X	X	X	X					
				1kg TUB with Handle (ALE260)	S		X																
24004298	R-135-1		0.20 - 0.20	60g VOC (ALE215)	S						X												X
				250g Amber Jar (ALE210)	S	X			X	X		X	X	X	X	X	X	X					
24004368	R127-3		0.20 - 0.20	60g VOC (ALE215)	S						X												X
				250g Amber Jar (ALE210)	S	X			X	X		X	X	X	X	X	X	X					
				1kg TUB with Handle (ALE260)	S		X																
24004362	R127-2		0.20 - 0.20	60g VOC (ALE215)	S						X												X
				250g Amber Jar (ALE210)	S	X			X	X		X	X	X	X			X	X				
24004353	R127-1		0.20 - 0.20	60g VOC (ALE215)	S						X												X
				250g Amber Jar (ALE210)	S	X			X	X		X	X	X	X	X	X	X					
				1kg TUB with Handle (ALE260)	S		X																
24004293	R106-2		0.20 - 0.20	60g VOC (ALE215)	S						X												X
				250g Amber Jar (ALE210)	S	X			X	X		X	X	X	X	X	X	X					
				1kg TUB with Handle (ALE260)	S		X																
24004283	R106-1		0.20 - 0.20	60g VOC (ALE215)	S						X												X

Validated

CERTIFICATE OF ANALYSIS

SDG:	210331-78	**Client Reference:**	P18-669	**Report Number:**	593957
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	593510

Results Legend

X Test

N No Determination Possible

Sample Types -
S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

Lab Sample No(s)			24004234	24004311			24004335		24004343	
Customer Sample Reference			W-208-4-1	W-208-4-2			W-208-4-3		W-208-4-4	
AGS Reference										
Depth (m)			0.20 - 0.20	0.20 - 0.20			0.20 - 0.20		0.20 - 0.20	
Container			60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)
Sample Type			S	S	S	S	S	S	S	S
Ammonium Soil by Titration	All	NDPs: 0 Tests: 19		X			X		X	
Asbestos ID in Solid Samples	All	NDPs: 0 Tests: 10				X				
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 19		X			X		X	
EPH CWG GC (S)	All	NDPs: 0 Tests: 19		X			X		X	
GRO by GC-FID (S)	All	NDPs: 0 Tests: 19	X		X			X		X
Metals in solid samples by OES	All	NDPs: 0 Tests: 19		X			X		X	
PAH by GCMS	All	NDPs: 0 Tests: 19		X			X		X	
pH	All	NDPs: 0 Tests: 19		X			X		X	
Phenols by HPLC (S)	All	NDPs: 0 Tests: 19		X			X		X	
Sample description	All	NDPs: 0 Tests: 18		X			X		X	
Total Organic Carbon	All	NDPs: 0 Tests: 19		X			X		X	
TPH CWG GC (S)	All	NDPs: 0 Tests: 19		X			X		X	
VOC MS (S)	All	NDPs: 0 Tests: 19	X		X			X		X

CERTIFICATE OF ANALYSIS

SDG:	210331-78	**Client Reference:**	P18-669	**Report Number:**	593957
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	593510

Sample Descriptions

Grain Sizes

very fine	<0.063mm	**fine**	0.063mm - 0.1mm	**medium**	0.1mm - 2mm	**coarse**	2mm - 10mm	**very coarse**	>10mm

Lab Sample No(s)	Customer Sample Ref.	Depth (m)	Colour	Description	Inclusions	Inclusions 2
24004278	R101-1	0.20 - 0.20	Dark Brown	Clay	Stones	Vegetation
24004378	R102-2	0.20 - 0.20	Dark Brown	Loamy Sand	Vegetation	Stones
24004243	R102-3	0.20 - 0.20	Dark Brown	Sand	Vegetation	Stones
24004251	R102-4	0.20 - 0.20	Dark Brown	Loamy Sand	Vegetation	Stones
24004257	R102-5	0.20 - 0.20	Dark Brown	Sandy Clay Loam	Vegetation	Stones
24004264	R102-6	0.20 - 0.20	Dark Brown	Sand	None	Stones
24004269	R102-7	0.20 - 0.20	Dark Brown	Sand	Vegetation	Stones
24004283	R106-1	0.20 - 0.20	Dark Brown	Loamy Sand	Vegetation	Stones
24004293	R106-2	0.20 - 0.20	Dark Brown	Silty Clay Loam	Stones	Vegetation
24004353	R127-1	0.20 - 0.20	Dark Brown	Loamy Sand	Stones	Crushed Brick
24004362	R127-2	0.20 - 0.20	Dark Brown	Sandy Loam	Vegetation	Brick
24004368	R127-3	0.20 - 0.20	Dark Brown	Sandy Loam	Stones	None
24004298	R-135-1	0.20 - 0.20	Black	Loamy Sand	Stones	Vegetation
24004304	R-135-2	0.20 - 0.20	Black	Loamy Sand	Stones	None
24004326	W-89-1	0.20 - 0.20	Dark Brown	Loamy Sand	Stones	Vegetation
24004234	W-208-4-1	0.20 - 0.20	Dark Brown	Loamy Sand	Stones	None
24004311	W-208-4-2	0.20 - 0.20	Dark Brown	Loamy Sand	Stones	None
24004335	W-208-4-3	0.20 - 0.20	Dark Brown	Loamy Sand	Stones	None
24004343	W-208-4-4	0.20 - 0.20	Dark Brown	Sandy Loam	Stones	None

These descriptions are only intended to act as a cross check if sample identities are questioned, and to provide a log of sample matrices with respect to MCERTS validation. They are not intended as full geological descriptions.

We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally ocurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample.

Other coarse granular materials such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

Validated

CERTIFICATE OF ANALYSIS

SDG:	210331-78	**Client Reference:**	P18-669	**Report Number:**	593957
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	593510

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	R101-1	R102-2	R102-3	R102-4	R102-5	R102-6
			Depth (m)	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	29/03/2021	29/03/2021	29/03/2021	29/03/2021	29/03/2021	29/03/2021
			Sample Time	.	.	.	.	.	.
			Date Received	31/03/2021	31/03/2021	31/03/2021	31/03/2021	31/03/2021	31/03/2021
			SDG Ref	210331-78	210331-78	210331-78	210331-78	210331-78	210331-78
			Lab Sample No.(s)	24004278	24004378	24004243	24004251	24004257	24004264
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		13	19	16	20	22	11
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	<12 M	<12 M	<12 M	<12 M	<12 M
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	0.0124 M	<0.01 M	<0.01 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M
Soil Organic Matter (SOM)	<0.35 %	TM132		1.03 #	5.74 #	7.79 #	24.8 #	4.31 #	2.9 #
pH	1 pH Units	TM133		8.68 M	9.39 M	8.66 M	8.35 M	8.5 M	11.4 M
Cyanide, Total	<1 mg/kg	TM153		<1 M	1.5 M	9.84 M	4.82 M	<1 M	3.14 M
Arsenic	<0.6 mg/kg	TM181		8.55 M	13.2 M	20.2 M	11.2 M	12.1 M	6.16 M
Cadmium	<0.02 mg/kg	TM181		0.254 M	0.797 M	10.1 M	2.2 M	0.717 M	0.729 M
Chromium	<0.9 mg/kg	TM181		18.1 M	54 M	162 M	326 M	39.1 M	849 M
Copper	<1.4 mg/kg	TM181		13.9 M	21.7 M	62.4 M	29.5 M	17.4 M	61 M
Iron	<1000 mg/kg	TM181		19900 #	71700 #	229000 #	129000 #	51100 #	145000 #
Lead	<0.7 mg/kg	TM181		25.2 M	191 M	1870 M	569 M	142 M	222 M
Manganese	<0.13 mg/kg	TM181		820 M	5980 M	14000 M	14300 M	1790 M	57700 M
Mercury	<0.1 mg/kg	TM181		<0.1 M	<0.1 M	<1 M	<1 M	<0.1 M	<1 M
Nickel	<0.2 mg/kg	TM181		22.1 M	21.9 M	41.8 M	26.2 M	33.6 M	9.45 M
Selenium	<1 mg/kg	TM181		<1 #	1.9 #	<10 #	11.1 #	<1 #	27 #
Vanadium	<0.2 mg/kg	TM181		25.7 #	116 #	386 #	717 #	83 #	742 #
Zinc	<1.9 mg/kg	TM181		92.4 M	824 M	6130 M	1520 M	499 M	1240 M
Asbestos Quantification - Gravimetric - %	<0.001 %	TM304							<0.001 #
Asbestos Quantification - PCOM Evaluation - %	<0.001 %	TM304							<0.001 #
Additional Asbestos Components (Using TM048)		TM304							None #
Analysts Comments		TM304							N/A
Asbestos Quantification - Total - %	<0.001 %	TM304							<0.001 #

Validated

CERTIFICATE OF ANALYSIS

SDG:	210331-78	**Client Reference:**	P18-669	**Report Number:**	593957
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	593510

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	R102-7	R106-1	R106-2	R127-1	R127-2	R127-3
			Depth (m)	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	29/03/2021	29/03/2021	29/03/2021	29/03/2021	29/03/2021	29/03/2021
			Sample Time	.	.	.	.	.	.
			Date Received	31/03/2021	31/03/2021	31/03/2021	31/03/2021	31/03/2021	31/03/2021
			SDG Ref	210331-78	210331-78	210331-78	210331-78	210331-78	210331-78
			Lab Sample No.(s)	24004269	24004283	24004293	24004353	24004362	24004368
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		17	16	19	9.9	12	12
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	<12 M	<12 M	<12 M	<12 M	<12 M
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 M	0.0119 M	0.0123 M	<0.01 M	<0.01 M	<0.01 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M
Soil Organic Matter (SOM)	<0.35 %	TM132		7.74 #	12.1 #	8.96 #	4.74 #	6.55 #	3.1 #
pH	1 pH Units	TM133		8.69 M	8.75 M	8.75 M	9.13 M	9.54 M	9.6 M
Cyanide, Total	<1 mg/kg	TM153		9.37 M	<1 M	<1 M	<1 M	<1 M	<1 M
Arsenic	<0.6 mg/kg	TM181		20.3 M	9.49 M	11.2 M	20 M	14.2 M	14 M
Cadmium	<0.02 mg/kg	TM181		8.76 M	0.267 M	0.376 M	<0.2 M	<0.2 M	<0.2 M
Chromium	<0.9 mg/kg	TM181		99.7 M	109 M	62.1 M	71.6 M	132 M	152 M
Copper	<1.4 mg/kg	TM181		64.9 M	18.3 M	14 M	51.5 M	25 M	30.3 M
Iron	<1000 mg/kg	TM181		242000 #	74500 #	35600 #	207000 #	161000 #	214000 #
Lead	<0.7 mg/kg	TM181		1750 M	90.1 M	79.5 M	74.1 M	75.7 M	94.3 M
Manganese	<0.13 mg/kg	TM181		9990 M	8270 M	3470 M	10200 M	12300 M	14700 M
Mercury	<0.1 mg/kg	TM181		<1 M	<0.1 M	<1 M	<1 M	<1 M	<1 M
Nickel	<0.2 mg/kg	TM181		41 M	20.4 M	21.8 M	40.1 M	24.7 M	29 M
Selenium	<1 mg/kg	TM181		<10 #	2.77 #	<10 #	<10 #	<10 #	<10 #
Vanadium	<0.2 mg/kg	TM181		315 #	116 #	66.8 #	161 #	212 #	259 #
Zinc	<1.9 mg/kg	TM181		5990 M	400 M	276 M	239 M	240 M	300 M

Validated

CERTIFICATE OF ANALYSIS

SDG:	210331-78	**Client Reference:**	P18-669	**Report Number:**	593957
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	593510

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	R-135-1	R-135-2	W-89-1	W-208-4-1	W-208-4-2	W-208-4-3
			Depth (m)	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	29/03/2021	29/03/2021	29/03/2021	29/03/2021	29/03/2021	29/03/2021
			Sample Time	.	.	.	.	.	.
			Date Received	31/03/2021	31/03/2021	31/03/2021	31/03/2021	31/03/2021	31/03/2021
			SDG Ref	210331-78	210331-78	210331-78	210331-78	210331-78	210331-78
			Lab Sample No.(s)	24004298	24004304	24004326	24004234	24004311	24004335
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		10	9.9	7.3	12	10	11
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	<12 M	<12 M	<12 M	<12 M	<12 M
Phenol	<0.01 mg/kg	TM062 (S)		0.0111 M	0.0111 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Cresols	<0.01 mg/kg	TM062 (S)		0.0222 M	0.0111 M	0.0108 M	<0.01 M	<0.01 M	<0.01 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M
Soil Organic Matter (SOM)	<0.35 %	TM132		26.9 #	40.2 #	1.81 #	2.53 #	2.86 #	2.62 #
pH	1 pH Units	TM133		9.55 M	9.72 M	9.26 M	9.71 M	10.3 M	9.65 M
Cyanide, Total	<1 mg/kg	TM153		<1 M	<1 M	<1 M	<1 M	<1 M	<1 M
Arsenic	<0.6 mg/kg	TM181		7.08 M	47.1 M	42.3 M	16.8 M	11.7 M	20 M
Cadmium	<0.02 mg/kg	TM181		<0.2 M	0.929 M	0.841 M	<0.2 M	<0.2 M	<0.2 M
Chromium	<0.9 mg/kg	TM181		244 M	64.5 M	412 M	107 M	32.5 M	125 M
Copper	<1.4 mg/kg	TM181		17.4 M	27.7 M	136 M	27 M	37.6 M	57.8 M
Iron	<1000 mg/kg	TM181		132000 #	58400 #	126000 #	254000 #	185000 #	218000 #
Lead	<0.7 mg/kg	TM181		66.4 M	22.9 M	539 M	54.3 M	113 M	102 M
Manganese	<0.13 mg/kg	TM181		24100 M	865 M	24100 M	10200 M	6830 M	11700 M
Mercury	<0.1 mg/kg	TM181		<1 M	<0.1 M	<1 M	<1 M	<1 M	<1 M
Nickel	<0.2 mg/kg	TM181		15.6 M	43.9 M	20.2 M	20.6 M	21.7 M	30.6 M
Selenium	<1 mg/kg	TM181		10 #	<1 #	11.4 #	<10 #	<10 #	<10 #
Vanadium	<0.2 mg/kg	TM181		966 #	114 #	332 #	150 #	149 #	224 #
Zinc	<1.9 mg/kg	TM181		189 M	125 M	998 M	212 M	347 M	325 M

Validated

CERTIFICATE OF ANALYSIS

SDG:	210331-78	**Client Reference:**	P18-669	**Report Number:**	593957
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	593510

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Customer Sample Ref.	W-208-4-4
Depth (m)	0.20 - 0.20
Sample Type	Soil/Solid (S)
Date Sampled	29/03/2021
Sample Time	.
Date Received	31/03/2021
SDG Ref	210331-78
Lab Sample No.(s)	24004343
AGS Reference	

Component	LOD/Units	Method	
Moisture Content Ratio (% of as received sample)	%	PM024	14
Exchangeable Ammonia as N	<12 mg/kg	TM024	<12 M
Phenol	<0.01 mg/kg	TM062 (S)	<0.01 M
Cresols	<0.01 mg/kg	TM062 (S)	<0.01 M
Xylenols	<0.015 mg/kg	TM062 (S)	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)	<0.035 M
Soil Organic Matter (SOM)	<0.35 %	TM132	4.1 #
pH	1 pH Units	TM133	9.12 M
Cyanide, Total	<1 mg/kg	TM153	<1 M
Arsenic	<0.6 mg/kg	TM181	20.2 M
Cadmium	<0.02 mg/kg	TM181	0.397 M
Chromium	<0.9 mg/kg	TM181	90.8 M
Copper	<1.4 mg/kg	TM181	53.4 M
Iron	<1000 mg/kg	TM181	194000 #
Lead	<0.7 mg/kg	TM181	162 M
Manganese	<0.13 mg/kg	TM181	13100 M
Mercury	<0.1 mg/kg	TM181	<1 M
Nickel	<0.2 mg/kg	TM181	30 M
Selenium	<1 mg/kg	TM181	<10 #
Vanadium	<0.2 mg/kg	TM181	205 #
Zinc	<1.9 mg/kg	TM181	467 M

Validated

CERTIFICATE OF ANALYSIS

SDG:	210331-78	**Client Reference:**	P18-669	**Report Number:**	593957
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	593510

PAH by GCMS

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	R101-1	R102-2	R102-3	R102-4	R102-5	R102-6
			Depth (m)	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	29/03/2021	29/03/2021	29/03/2021	29/03/2021	29/03/2021	29/03/2021
			Sample Time	.	.	.	.	.	.
			Date Received	31/03/2021	31/03/2021	31/03/2021	31/03/2021	31/03/2021	31/03/2021
			SDG Ref	210331-78	210331-78	210331-78	210331-78	210331-78	210331-78
			Lab Sample No.(s)	24004278	24004378	24004243	24004251	24004257	24004264
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		88.7	88.7	88.2	89.2	89.8	87.8
Acenaphthene-d10 % recovery**	%	TM218		92.2	90.9	92.9	92.9	93.6	93.2
Phenanthrene-d10 % recovery**	%	TM218		93	91.2	91.7	93.3	94.5	97.7
Chrysene-d12 % recovery**	%	TM218		97.3	90.9	76	91.1	98.8	96.5
Perylene-d12 % recovery**	%	TM218		97	88	68.7	86.8	93.2	90.6
Naphthalene	<9 µg/kg	TM218		13.3 M	122 M	141 M	379 M	134 M	109 M
Acenaphthylene	<12 µg/kg	TM218		<12 M	69.5 M	29.9 M	507 M	89.7 M	114 M
Acenaphthene	<8 µg/kg	TM218		<8 M	18 M	39.3 M	83.7 M	<8 M	16 M
Fluorene	<10 µg/kg	TM218		<10 M	40.1 M	71.5 M	225 M	26.1 M	36.9 M
Phenanthrene	<15 µg/kg	TM218		38.7 M	309 M	445 M	2040 M	215 M	347 M
Anthracene	<16 µg/kg	TM218		<16 M	81.6 M	111 M	562 M	178 M	108 M
Fluoranthene	<17 µg/kg	TM218		77.3 M	638 M	554 M	5100 M	668 M	1110 M
Pyrene	<15 µg/kg	TM218		62.3 M	521 M	509 M	3860 M	537 M	968 M
Benz(a)anthracene	<14 µg/kg	TM218		47.5 M	352 M	378 M	2540 M	440 M	616 M
Chrysene	<10 µg/kg	TM218		52.5 M	382 M	438 M	2570 M	631 M	702 M
Benzo(b)fluoranthene	<15 µg/kg	TM218		72.4 M	541 M	617 M	3860 M	659 M	1050 M
Benzo(k)fluoranthene	<14 µg/kg	TM218		22.4 M	167 M	180 M	1140 M	236 M	316 M
Benzo(a)pyrene	<15 µg/kg	TM218		38.4 M	324 M	323 M	2230 M	354 M	474 M
Indeno(1,2,3-cd)pyrene	<18 µg/kg	TM218		34.6 M	288 M	227 M	1910 M	327 M	501 M
Dibenzo(a,h)anthracene	<23 µg/kg	TM218		<23 M	64 M	43.6 M	439 M	78.5 M	124 M
Benzo(g,h,i)perylene	<24 µg/kg	TM218		33.8 M	279 M	230 M	1700 M	278 M	453 M
PAH, Total Detected USEPA 16	<118 µg/kg	TM218		493	4200	4340	29200	4850	7040

Validated

CERTIFICATE OF ANALYSIS

SDG:	210331-78	**Client Reference:**	P18-669	**Report Number:**	593957
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	593510

PAH by GCMS

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	R102-7	R106-1	R106-2	R127-1	R127-2	R127-3
			Depth (m)	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	29/03/2021	29/03/2021	29/03/2021	29/03/2021	29/03/2021	29/03/2021
			Sample Time	.	.	.	.	.	.
			Date Received	31/03/2021	31/03/2021	31/03/2021	31/03/2021	31/03/2021	31/03/2021
			SDG Ref	210331-78	210331-78	210331-78	210331-78	210331-78	210331-78
			Lab Sample No.(s)	24004269	24004283	24004293	24004353	24004362	24004368
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		88.4	86.5	91.1	87.9	88.3	86.7
Acenaphthene-d10 % recovery**	%	TM218		88.8	92	93.5	93.5	85.9	91.3
Phenanthrene-d10 % recovery**	%	TM218		89.6	94.4	91.3	98.8	80.6	85.7
Chrysene-d12 % recovery**	%	TM218		83.6	95.9	85	85	71.9	85.1
Perylene-d12 % recovery**	%	TM218		71.5	95.9	79.5	89.5	76.8	81.5
Naphthalene	<9 µg/kg	TM218		126 M	591 M	203 M	237 M	124 M	171 M
Acenaphthylene	<12 µg/kg	TM218		18.2 M	903 M	183 M	218 M	<60 M	119 M
Acenaphthene	<8 µg/kg	TM218		36.1 M	57.9 M	17.4 M	56.5 M	<40 M	<40 M
Fluorene	<10 µg/kg	TM218		64 M	336 M	103 M	295 M	<50 M	64.9 M
Phenanthrene	<15 µg/kg	TM218		430 M	3480 M	1150 M	1860 M	376 M	487 M
Anthracene	<16 µg/kg	TM218		109 M	1100 M	265 M	378 M	104 M	144 M
Fluoranthene	<17 µg/kg	TM218		755 M	9330 M	2500 M	2380 M	785 M	1010 M
Pyrene	<15 µg/kg	TM218		750 M	6780 M	1770 M	1700 M	675 M	852 M
Benz(a)anthracene	<14 µg/kg	TM218		817 M	4470 M	1020 M	986 M	448 M	556 M
Chrysene	<10 µg/kg	TM218		949 M	4290 M	1050 M	706 M	479 M	682 M
Benzo(b)fluoranthene	<15 µg/kg	TM218		1790 M	6730 M	1550 M	1060 M	748 M	919 M
Benzo(k)fluoranthene	<14 µg/kg	TM218		487 M	2170 M	482 M	369 M	242 M	301 M
Benzo(a)pyrene	<15 µg/kg	TM218		974 M	3850 M	928 M	840 M	422 M	543 M
Indeno(1,2,3-cd)pyrene	<18 µg/kg	TM218		743 M	3420 M	734 M	716 M	436 M	517 M
Dibenzo(a,h)anthracene	<23 µg/kg	TM218		120 M	784 M	163 M	127 M	<115 M	<115 M
Benzo(g,h,i)perylene	<24 µg/kg	TM218		656 M	2960 M	709 M	662 M	389 M	504 M
PAH, Total Detected USEPA 16	<118 µg/kg	TM218		8820	51300	12800	12600	5230	6870

Validated

CERTIFICATE OF ANALYSIS

SDG:	210331-78	**Client Reference:**	P18-669	**Report Number:**	593957
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	593510

PAH by GCMS

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	R-135-1	R-135-2	W-89-1	W-208-4-1	W-208-4-2	W-208-4-3
			Depth (m)	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	29/03/2021	29/03/2021	29/03/2021	29/03/2021	29/03/2021	29/03/2021
			Sample Time	.	.	.	.	.	.
			Date Received	31/03/2021	31/03/2021	31/03/2021	31/03/2021	31/03/2021	31/03/2021
			SDG Ref	210331-78	210331-78	210331-78	210331-78	210331-78	210331-78
			Lab Sample No.(s)	24004298	24004304	24004326	24004234	24004311	24004335
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		91.4	89.4	85.5	89.1	83.6	89
Acenaphthene-d10 % recovery**	%	TM218		91.5	92.8	90.9	94.2	80.8	86.7
Phenanthrene-d10 % recovery**	%	TM218		88.6	94.8	93.6	96.7	79.8	77.4
Chrysene-d12 % recovery**	%	TM218		75.4	100	106	99.8	70.1	78
Perylene-d12 % recovery**	%	TM218		80.2	90.4	108	97	77.2	82.9
Naphthalene	<9 µg/kg	TM218		1960 M	3550 M	885 M	267 M	134 M	420 M
Acenaphthylene	<12 µg/kg	TM218		386 M	1370 M	<60 M	157 M	60.3 M	1150 M
Acenaphthene	<8 µg/kg	TM218		170 M	375 M	2400 M	43.2 M	26.4 M	74.2 M
Fluorene	<10 µg/kg	TM218		396 M	1150 M	1140 M	101 M	54.2 M	890 M
Phenanthrene	<15 µg/kg	TM218		2930 M	8420 M	13900 M	703 M	401 M	6020 M
Anthracene	<16 µg/kg	TM218		579 M	1890 M	3830 M	191 M	113 M	916 M
Fluoranthene	<17 µg/kg	TM218		3710 M	13000 M	27900 M	1460 M	790 M	13400 M
Pyrene	<15 µg/kg	TM218		2810 M	9440 M	28800 M	1130 M	624 M	9570 M
Benz(a)anthracene	<14 µg/kg	TM218		1550 M	5650 M	18600 M	773 M	353 M	5000 M
Chrysene	<10 µg/kg	TM218		1460 M	5740 M	18300 M	813 M	362 M	3380 M
Benzo(b)fluoranthene	<15 µg/kg	TM218		2380 M	7120 M	24400 M	1100 M	524 M	6240 M
Benzo(k)fluoranthene	<14 µg/kg	TM218		785 M	2230 M	9580 M	349 M	205 M	2080 M
Benzo(a)pyrene	<15 µg/kg	TM218		1280 M	4420 M	19700 M	632 M	296 M	3400 M
Indeno(1,2,3-cd)pyrene	<18 µg/kg	TM218		1220 M	3660 M	14700 M	543 M	279 M	3140 M
Dibenzo(a,h)anthracene	<23 µg/kg	TM218		181 M	793 M	2470 M	130 M	45.1 M	453 M
Benzo(g,h,i)perylene	<24 µg/kg	TM218		936 M	3090 M	12700 M	507 M	238 M	2080 M
PAH, Total Detected USEPA 16	<118 µg/kg	TM218		22700	71900	199000	8910	4510	58200

Validated

CERTIFICATE OF ANALYSIS

SDG:	210331-78	**Client Reference:**	P18-669	**Report Number:**	593957
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	593510

PAH by GCMS

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Customer Sample Ref.	W-208-4-4
Depth (m)	0.20 - 0.20
Sample Type	Soil/Solid (S)
Date Sampled	29/03/2021
Sample Time	.
Date Received	31/03/2021
SDG Ref	210331-78
Lab Sample No.(s)	24004343
AGS Reference	

Component	LOD/Units	Method	
Naphthalene-d8 % recovery**	%	TM218	85.9
Acenaphthene-d10 % recovery**	%	TM218	83.9
Phenanthrene-d10 % recovery**	%	TM218	80.5
Chrysene-d12 % recovery**	%	TM218	71.9
Perylene-d12 % recovery**	%	TM218	80.2
Naphthalene	<9 µg/kg	TM218	95.9 M
Acenaphthylene	<12 µg/kg	TM218	47 M
Acenaphthene	<8 µg/kg	TM218	16.3 M
Fluorene	<10 µg/kg	TM218	39.1 M
Phenanthrene	<15 µg/kg	TM218	294 M
Anthracene	<16 µg/kg	TM218	74.7 M
Fluoranthene	<17 µg/kg	TM218	540 M
Pyrene	<15 µg/kg	TM218	442 M
Benz(a)anthracene	<14 µg/kg	TM218	243 M
Chrysene	<10 µg/kg	TM218	255 M
Benzo(b)fluoranthene	<15 µg/kg	TM218	371 M
Benzo(k)fluoranthene	<14 µg/kg	TM218	141 M
Benzo(a)pyrene	<15 µg/kg	TM218	217 M
Indeno(1,2,3-cd)pyrene	<18 µg/kg	TM218	212 M
Dibenzo(a,h)anthracene	<23 µg/kg	TM218	37.9 M
Benzo(g,h,i)perylene	<24 µg/kg	TM218	195 M
PAH, Total Detected USEPA 16	<118 µg/kg	TM218	3220

Validated

CERTIFICATE OF ANALYSIS

SDG:	210331-78	**Client Reference:**	P18-669	**Report Number:**	593957
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	593510

TPH CWG (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	R101-1	R102-2	R102-3	R102-4	R102-5	R102-6
			Depth (m)	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	29/03/2021	29/03/2021	29/03/2021	29/03/2021	29/03/2021	29/03/2021
			Sample Time	.	.	.	.	.	.
			Date Received	31/03/2021	31/03/2021	31/03/2021	31/03/2021	31/03/2021	31/03/2021
			SDG Ref	210331-78	210331-78	210331-78	210331-78	210331-78	210331-78
			Lab Sample No.(s)	24004278	24004378	24004243	24004251	24004257	24004264
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		103	83.6	115	78.6	85.4	115
Aliphatics >C5-C6	<10 µg/kg	TM089		<10	<10	<10	<10	<10	<10
Aliphatics >C6-C8	<10 µg/kg	TM089		<10	<10	<10	<10	<10	<10
Aliphatics >C8-C10	<10 µg/kg	TM089		<10	<10	<10	<10	<10	<10
Aliphatics >C10-C12	<1000 µg/kg	TM414		<1000	<1000	<1000	<1000	<1000	<1000
Aliphatics >C12-C16	<1000 µg/kg	TM414		<1000	1520	1090	1030	<1000	2340
Aliphatics >C16-C21	<1000 µg/kg	TM414		<1000	7500	16500	10800	3490	17500
Aliphatics >C21-C35	<1000 µg/kg	TM414		<1000	34100	54400	35500	21000	67300
Aliphatics >C35-C44	<1000 µg/kg	TM414		<1000	9290	7570	7390	5810	18700
Total Aliphatics >C10-C44	<5000 µg/kg	TM414		<5000	52600	79700	54900	30800	106000
Total Aliphatics & Aromatics >C10-C44	<10000 µg/kg	TM414		<10000	78700	119000	148000	51300	376000
Aromatics >EC5-EC7	<10 µg/kg	TM089		<10	<10	<10	<10	<10	<10
Aromatics >EC7-EC8	<10 µg/kg	TM089		<10	<10	<10	<10	<10	<10
Aromatics >EC8-EC10	<10 µg/kg	TM089		<10	<10	<10	<10	<10	<10
Aromatics > EC10-EC12	<1000 µg/kg	TM414		<1000	<1000	<1000	<1000	<1000	<1000
Aromatics > EC12-EC16	<1000 µg/kg	TM414		<1000	<1000	<1000	1830	<1000	1020
Aromatics > EC16-EC21	<1000 µg/kg	TM414		<1000	2760	4650	20500	1660	28500
Aromatics > EC21-EC35	<1000 µg/kg	TM414		1410	20700	28400	63400	16300	215000
Aromatics >EC35-EC44	<1000 µg/kg	TM414		<1000	2460	6140	7390	2610	26300
Aromatics > EC40-EC44	<1000 µg/kg	TM414		<1000	<1000	4100	1710	<1000	3640
Total Aromatics > EC10-EC44	<5000 µg/kg	TM414		<5000	26100	39700	93600	20500	271000
Total Aliphatics & Aromatics >C5-C44	<10000 µg/kg	TM414		<10000	78700	119000	148000	51300	376000
Total Aliphatics >C5-C10	<50 µg/kg	TM089		<50	<50	<50	<50	<50	<50
Total Aromatics >EC5-EC10	<50 µg/kg	TM089		<50	<50	<50	<50	<50	<50
GRO >C5-C10	<20 µg/kg	TM089		<20	<20	<20	<20	<20	<20

Validated

CERTIFICATE OF ANALYSIS

SDG:	210331-78	**Client Reference:**	P18-669	**Report Number:**	593957
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	593510

TPH CWG (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	R102-7	R106-1	R106-2	R127-1	R127-2	R127-3
			Depth (m)	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	29/03/2021	29/03/2021	29/03/2021	29/03/2021	29/03/2021	29/03/2021
			Sample Time	.	.	.	.	.	.
			Date Received	31/03/2021	31/03/2021	31/03/2021	31/03/2021	31/03/2021	31/03/2021
			SDG Ref	210331-78	210331-78	210331-78	210331-78	210331-78	210331-78
			Lab Sample No.(s)	24004269	24004283	24004293	24004353	24004362	24004368
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		96.5	58.4 4	79.1	78.5	94.5	92.2
Aliphatics >C5-C6	<10 µg/kg	TM089		<10	<10 4	<10	<10	<10	12.5
Aliphatics >C6-C8	<10 µg/kg	TM089		<10	<10 4	<10	<10	<10	18.2
Aliphatics >C8-C10	<10 µg/kg	TM089		<10	<10 4	<10	<10	<10	18.2
Aliphatics >C10-C12	<1000 µg/kg	TM414		<1000	<1000	<1000	<1000	<1000	<1000
Aliphatics >C12-C16	<1000 µg/kg	TM414		<1000	<1000	<1000	2350	1650	1660
Aliphatics >C16-C21	<1000 µg/kg	TM414		15400	2340	1010	11000	11800	7750
Aliphatics >C21-C35	<1000 µg/kg	TM414		48200	16800	12500	63800	71300	45800
Aliphatics >C35-C44	<1000 µg/kg	TM414		8960	3200	2470	32900	30200	25000
Total Aliphatics >C10-C44	<5000 µg/kg	TM414		73600	22700	16100	110000	115000	80200
Total Aliphatics & Aromatics >C10-C44	<10000 µg/kg	TM414		98800	108000	237000	150000	144000	137000
Aromatics >EC5-EC7	<10 µg/kg	TM089		<10	<10 4	<10	<10	<10	<10
Aromatics >EC7-EC8	<10 µg/kg	TM089		<10	<10 4	<10	<10	<10	<10
Aromatics >EC8-EC10	<10 µg/kg	TM089		<10	<10 4	<10	<10	<10	12.5
Aromatics > EC10-EC12	<1000 µg/kg	TM414		<1000	<1000	<1000	<1000	<1000	<1000
Aromatics > EC12-EC16	<1000 µg/kg	TM414		<1000	<1000	2620	<1000	<1000	<1000
Aromatics > EC16-EC21	<1000 µg/kg	TM414		3110	16200	72900	4410	2760	9710
Aromatics > EC21-EC35	<1000 µg/kg	TM414		20900	57900	122000	31900	24700	42500
Aromatics >EC35-EC44	<1000 µg/kg	TM414		<1000	9950	22800	2470	1480	4470
Aromatics > EC40-EC44	<1000 µg/kg	TM414		<1000	1490	4530	<1000	<1000	<1000
Total Aromatics > EC10-EC44	<5000 µg/kg	TM414		25200	85200	221000	39400	29200	57200
Total Aliphatics & Aromatics >C5-C44	<10000 µg/kg	TM414		98800	108000	237000	150000	144000	137000
Total Aliphatics >C5-C10	<50 µg/kg	TM089		<50	<50 4	<50	<50	<50	<50
Total Aromatics >EC5-EC10	<50 µg/kg	TM089		<50	<50 4	<50	<50	<50	<50
GRO >C5-C10	<20 µg/kg	TM089		<20	<20 4	<20	<20	<20	<20

Validated

CERTIFICATE OF ANALYSIS

SDG:	210331-78	**Client Reference:**	P18-669	**Report Number:**	593957
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	593510

TPH CWG (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	R-135-1	R-135-2	W-89-1	W-208-4-1	W-208-4-2	W-208-4-3
			Depth (m)	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	29/03/2021	29/03/2021	29/03/2021	29/03/2021	29/03/2021	29/03/2021
			Sample Time	.	.	.	.	.	.
			Date Received	31/03/2021	31/03/2021	31/03/2021	31/03/2021	31/03/2021	31/03/2021
			SDG Ref	210331-78	210331-78	210331-78	210331-78	210331-78	210331-78
			Lab Sample No.(s)	24004298	24004304	24004326	24004234	24004311	24004335
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		24.4 4	11.8 4	78.4	70.5	86.4	108
Aliphatics >C5-C6	<10 µg/kg	TM089		<10 4	<10 4	<10	<10	<10	<10
Aliphatics >C6-C8	<10 µg/kg	TM089		<10 4	<10 4	<10	<10	<10	<10
Aliphatics >C8-C10	<10 µg/kg	TM089		<10 4	<10 4	<10	<10	<10	<10
Aliphatics >C10-C12	<1000 µg/kg	TM414		<1000	<1000	<1000	<1000	<1000	<1000
Aliphatics >C12-C16	<1000 µg/kg	TM414		4440	2060	1540	2180	1250	1990
Aliphatics >C16-C21	<1000 µg/kg	TM414		8140	6890	36800	9990	6730	8100
Aliphatics >C21-C35	<1000 µg/kg	TM414		27400	36500	1450000	51600	41400	53800
Aliphatics >C35-C44	<1000 µg/kg	TM414		6410	8580	333000	11100	31400	19100
Total Aliphatics >C10-C44	<5000 µg/kg	TM414		47100	54200	1820000	74900	80800	83000
Total Aliphatics & Aromatics >C10-C44	<10000 µg/kg	TM414		143000	160000	2240000	94500	104000	107000
Aromatics >EC5-EC7	<10 µg/kg	TM089		<10 4	<10 4	<10	<10	<10	<10
Aromatics >EC7-EC8	<10 µg/kg	TM089		<10 4	<10 4	<10	<10	<10	<10
Aromatics >EC8-EC10	<10 µg/kg	TM089		<10 4	<10 4	<10	<10	<10	<10
Aromatics > EC10-EC12	<1000 µg/kg	TM414		2390	2710	<1000	<1000	<1000	<1000
Aromatics > EC12-EC16	<1000 µg/kg	TM414		7490	4220	1900	<1000	<1000	<1000
Aromatics > EC16-EC21	<1000 µg/kg	TM414		28300	23600	19300	3040	4320	3280
Aromatics > EC21-EC35	<1000 µg/kg	TM414		55200	67100	381000	15200	17200	18400
Aromatics >EC35-EC44	<1000 µg/kg	TM414		2760	8330	14600	<1000	1510	1510
Aromatics > EC40-EC44	<1000 µg/kg	TM414		<1000	<1000	1070	<1000	<1000	<1000
Total Aromatics > EC10-EC44	<5000 µg/kg	TM414		96200	106000	417000	19600	23300	23600
Total Aliphatics & Aromatics >C5-C44	<10000 µg/kg	TM414		143000	160000	2240000	94500	104000	107000
Total Aliphatics >C5-C10	<50 µg/kg	TM089		<50 4	<50 4	<50	<50	<50	<50
Total Aromatics >EC5-EC10	<50 µg/kg	TM089		<50 4	<50 4	<50	<50	<50	<50
GRO >C5-C10	<20 µg/kg	TM089		<20 4	<20 4	<20	<20	<20	<20

Validated

CERTIFICATE OF ANALYSIS

SDG:	210331-78	**Client Reference:**	P18-669	**Report Number:**	593957
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	593510

TPH CWG (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Customer Sample Ref.	W-208-4-4
Depth (m)	0.20 - 0.20
Sample Type	Soil/Solid (S)
Date Sampled	29/03/2021
Sample Time	.
Date Received	31/03/2021
SDG Ref	210331-78
Lab Sample No.(s)	24004343
AGS Reference	

Component	LOD/Units	Method	
GRO Surrogate % recovery**	%	TM089	82.8
Aliphatics >C5-C6	<10 µg/kg	TM089	<10
Aliphatics >C6-C8	<10 µg/kg	TM089	<10
Aliphatics >C8-C10	<10 µg/kg	TM089	<10
Aliphatics >C10-C12	<1000 µg/kg	TM414	<1000
Aliphatics >C12-C16	<1000 µg/kg	TM414	<1000
Aliphatics >C16-C21	<1000 µg/kg	TM414	3960
Aliphatics >C21-C35	<1000 µg/kg	TM414	27300
Aliphatics >C35-C44	<1000 µg/kg	TM414	8040
Total Aliphatics >C10-C44	<5000 µg/kg	TM414	39400
Total Aliphatics & Aromatics >C10-C44	<10000 µg/kg	TM414	53400
Aromatics >EC5-EC7	<10 µg/kg	TM089	<10
Aromatics >EC7-EC8	<10 µg/kg	TM089	<10
Aromatics >EC8-EC10	<10 µg/kg	TM089	<10
Aromatics > EC10-EC12	<1000 µg/kg	TM414	<1000
Aromatics > EC12-EC16	<1000 µg/kg	TM414	<1000
Aromatics > EC16-EC21	<1000 µg/kg	TM414	1420
Aromatics > EC21-EC35	<1000 µg/kg	TM414	11600
Aromatics >EC35-EC44	<1000 µg/kg	TM414	<1000
Aromatics > EC40-EC44	<1000 µg/kg	TM414	<1000
Total Aromatics > EC10-EC44	<5000 µg/kg	TM414	14000
Total Aliphatics & Aromatics >C5-C44	<10000 µg/kg	TM414	53400
Total Aliphatics >C5-C10	<50 µg/kg	TM089	<50
Total Aromatics >EC5-EC10	<50 µg/kg	TM089	<50
GRO >C5-C10	<20 µg/kg	TM089	<20

CERTIFICATE OF ANALYSIS

SDG:	210331-78	**Client Reference:**	P18-669	**Report Number:**	593957
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	593510

VOC MS (S)

Results Legend	
#	ISO17025 accredited.
M	mCERTS accredited.
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tot.unfilt	Total / unfiltered sample.
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**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	R101-1	R102-2	R102-3	R102-4	R102-5	R102-6
			Depth (m)	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	29/03/2021	29/03/2021	29/03/2021	29/03/2021	29/03/2021	29/03/2021
			Sample Time	.	.	.	.	.	.
			Date Received	31/03/2021	31/03/2021	31/03/2021	31/03/2021	31/03/2021	31/03/2021
			SDG Ref	210331-78	210331-78	210331-78	210331-78	210331-78	210331-78
			Lab Sample No.(s)	24004278	24004378	24004243	24004251	24004257	24004264
			AGS Reference						
Dibromofluoromethane**	%	TM116		107	113	110	107	107	106
Toluene-d8**	%	TM116		97.5	95.9	94.3	94.6	96	94.7
4-Bromofluorobenzene**	%	TM116		103	99.1	103	95.8	102	106
Methyl Tertiary Butyl Ether	<10 µg/kg	TM116		<200 M	<200 M	<200 M	<200 M	<200 M	<200 M
Benzene	<9 µg/kg	TM116		<180 M	<180 M	<180 M	<180 M	<180 M	<180 M
Toluene	<7 µg/kg	TM116		<140 M	<140 M	<140 M	<140 M	<140 M	<140 M
Ethylbenzene	<4 µg/kg	TM116		<80 M	<80 M	<80 M	<80 M	<80 M	<80 M
p/m-Xylene	<10 µg/kg	TM116		<200 #	<200 #	<200 #	<200 #	<200 #	<200 #
o-Xylene	<10 µg/kg	TM116		<200 M	<200 M	<200 M	<200 M	<200 M	<200 M
Naphthalene	<13 µg/kg	TM116		<260 M	<260 M	<260 M	<260 M	<260 M	<260 M
Sum of Detected Xylenes	<0.02 mg/kg	TM116		<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Sum of BTEX	<40 µg/kg	TM116		<800	<800	<800	<800	<800	<800

Validated

CERTIFICATE OF ANALYSIS

SDG:	210331-78	**Client Reference:**	P18-669	**Report Number:**	593957
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	593510

VOC MS (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	R102-7	R106-1	R106-2	R127-1	R127-2	R127-3
			Depth (m)	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	29/03/2021	29/03/2021	29/03/2021	29/03/2021	29/03/2021	29/03/2021
			Sample Time	.	.	.	.	.	.
			Date Received	31/03/2021	31/03/2021	31/03/2021	31/03/2021	31/03/2021	31/03/2021
			SDG Ref	210331-78	210331-78	210331-78	210331-78	210331-78	210331-78
			Lab Sample No.(s)	24004269	24004283	24004293	24004353	24004362	24004368
			AGS Reference						
Dibromofluoromethane**	%	TM116		110	107	112	109	111	108
Toluene-d8**	%	TM116		96.7	94.8	98.2	95.3	96.9	95.8
4-Bromofluorobenzene**	%	TM116		98	106	100	101	109	96.8
Methyl Tertiary Butyl Ether	<10 µg/kg	TM116		<200 M	<200 M	<200 M	<200 M	<200 M	<200 M
Benzene	<9 µg/kg	TM116		<180 M	<180 M	<180 M	<180 M	<180 M	<180 M
Toluene	<7 µg/kg	TM116		<140 M	<140 M	<140 M	<140 M	<140 M	<140 M
Ethylbenzene	<4 µg/kg	TM116		<80 M	<80 M	<80 M	<80 M	<80 M	<80 M
p/m-Xylene	<10 µg/kg	TM116		<200 #	<200 #	<200 #	<200 #	<200 #	<200 #
o-Xylene	<10 µg/kg	TM116		<200 M	<200 M	<200 M	<200 M	<200 M	<200 M
Naphthalene	<13 µg/kg	TM116		<260 M	<260 M	<260 M	<260 M	<260 M	<260 M
Sum of Detected Xylenes	<0.02 mg/kg	TM116		<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Sum of BTEX	<40 µg/kg	TM116		<800	<800	<800	<800	<800	<800

CERTIFICATE OF ANALYSIS

SDG:	210331-78	**Client Reference:**	P18-669	**Report Number:**	593957
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	593510

VOC MS (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	R-135-1	R-135-2	W-89-1	W-208-4-1	W-208-4-2	W-208-4-3
			Depth (m)	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	29/03/2021	29/03/2021	29/03/2021	29/03/2021	29/03/2021	29/03/2021
			Sample Time	.	.	.	.	.	.
			Date Received	31/03/2021	31/03/2021	31/03/2021	31/03/2021	31/03/2021	31/03/2021
			SDG Ref	210331-78	210331-78	210331-78	210331-78	210331-78	210331-78
			Lab Sample No.(s)	24004298	24004304	24004326	24004234	24004311	24004335
			AGS Reference						
Dibromofluoromethane**	%	TM116		87	84.3	107	107	109	111
Toluene-d8**	%	TM116		87.6	83.4	95.4	97.7	98.7	96.1
4-Bromofluorobenzene**	%	TM116		80.4	76.3	102	102	101	101
Methyl Tertiary Butyl Ether	<10 µg/kg	TM116		<200 M	<200 M	<200 M	<200 M	<200 M	<200 M
Benzene	<9 µg/kg	TM116		<180 M	<180 M	<180 M	<180 M	<180 M	<180 M
Toluene	<7 µg/kg	TM116		<140 M	<140 M	<140 M	<140 M	<140 M	<140 M
Ethylbenzene	<4 µg/kg	TM116		<80 M	<80 M	<80 M	<80 M	<80 M	<80 M
p/m-Xylene	<10 µg/kg	TM116		<200 #	<200 #	<200 #	<200 #	<200 #	<200 #
o-Xylene	<10 µg/kg	TM116		<200 M	<200 M	<200 M	<200 M	<200 M	<200 M
Naphthalene	<13 µg/kg	TM116		817 M	639 M	<260 M	<260 M	<260 M	<260 M
Sum of Detected Xylenes	<0.02 mg/kg	TM116		<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Sum of BTEX	<40 µg/kg	TM116		<800	<800	<800	<800	<800	<800

CERTIFICATE OF ANALYSIS

SDG:	210331-78	**Client Reference:**	P18-669	**Report Number:**	593957
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	593510

VOC MS (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Customer Sample Ref.	W-208-4-4
Depth (m)	0.20 - 0.20
Sample Type	Soil/Solid (S)
Date Sampled	29/03/2021
Sample Time	.
Date Received	31/03/2021
SDG Ref	210331-78
Lab Sample No.(s)	24004343
AGS Reference	

Component	LOD/Units	Method	
Dibromofluoromethane**	%	TM116	111
Toluene-d8**	%	TM116	96.6
4-Bromofluorobenzene**	%	TM116	101
Methyl Tertiary Butyl Ether	<10 µg/kg	TM116	<200 M
Benzene	<9 µg/kg	TM116	<180 M
Toluene	<7 µg/kg	TM116	<140 M
Ethylbenzene	<4 µg/kg	TM116	<80 M
p/m-Xylene	<10 µg/kg	TM116	<200 #
o-Xylene	<10 µg/kg	TM116	<200 M
Naphthalene	<13 µg/kg	TM116	<260 M
Sum of Detected Xylenes	<0.02 mg/kg	TM116	<0.4
Sum of BTEX	<40 µg/kg	TM116	<800

CERTIFICATE OF ANALYSIS

SDG:	210331-78	**Client Reference:**	P18-669	**Report Number:**	593957
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	593510

Asbestos Identification - Solid Samples

Results Legend

#	ISO17025 accredited.
M	*m*CERTS accredited.
*	Subcontracted test.
(F)	Trigger breach confirmed
1-5&+$@	Sample deviation (see appendix)

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthophyllite	Fibrous Tremolite	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	R101-1 0.20 - 0.20 SOLID 29/03/2021 00:00:00 31/03/2021 05:00:00 210331-78 24004278 TM048	08/04/2021	Barbara Urbanek-Walsh	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	R102-2 0.20 - 0.20 SOLID 29/03/2021 00:00:00 31/03/2021 05:00:00 210331-78 24004378 TM048	08/04/2021	Barbara Urbanek-Walsh	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	R102-4 0.20 - 0.20 SOLID 29/03/2021 00:00:00 31/03/2021 05:00:00 210331-78 24004251 TM048	07/04/2021	Barbara Urbanek-Walsh	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	R102-6 0.20 - 0.20 SOLID 29/03/2021 00:00:00 31/03/2021 05:00:00 210331-78 24004264 TM048	07/04/2021	Marcin Magdziarek	Loose fibres in soil	Trace (#)	Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	R106-2 0.20 - 0.20 SOLID 29/03/2021 00:00:00 31/03/2021 05:00:00 210331-78 24004293 TM048	07/04/2021	Barbara Urbanek-Walsh	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	R127-1 0.20 - 0.20 SOLID 29/03/2021 00:00:00 31/03/2021 05:00:00 210331-78 24004353 TM048	07.04.21	Emily Anderton	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	R127-3 0.20 - 0.20 SOLID 29/03/2021 00:00:00 31/03/2021 05:00:00 210331-78 24004368 TM048	07/04/2021	Barbara Urbanek-Walsh	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	R-135-2 0.20 - 0.20 SOLID 29/03/2021 00:00:00 31/03/2021 05:00:00 210331-78 24004304 TM048	08/04/2021	Marcin Magdziarek	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected

Validated

CERTIFICATE OF ANALYSIS

SDG:	210331-78	**Client Reference:**	P18-669	**Report Number:**	593957
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	593510

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthophyllite	Fibrous Tremolite	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	W-208-4-1 0.20 - 0.20 SOLID 29/03/2021 00:00:00 31/03/2021 05:00:00 210331-78 24004234 TM048	07.04.21	Emily Anderton	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	W-208-4-3 0.20 - 0.20 SOLID 29/03/2021 00:00:00 31/03/2021 05:00:00 210331-78 24004335 TM048	07.04.21	Emily Anderton	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected

CERTIFICATE OF ANALYSIS

SDG:	210331-78	**Client Reference:**	P18-669	**Report Number:**	593957
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	593510

Asbestos Quantification - Full

Results Legend

#	ISO17025 accredited.
M	*m*CERTS accredited.
*	Subcontracted test.
(F)	Trigger breach confirmed
1-5&+$@	Sample deviation (see appendix)

		Additional Asbestos Components	Analysts Comments	Asbestos Quantification - Gravimetric - %	Asbestos Quantification - PCOM	Asbestos Quantification - Total - %
Cust. Sample Ref.	R102-6	None (#)	N/A	<0.001 (#)	<0.001 (#)	<0.001 (#)
Depth (m)	0.20 - 0.20					
Sample Type	SOLID					
Date Sampled	29/03/2021 00:00:00					
Date Received	31/03/2021 05:00:00					
SDG	210331-78					
Original Sample	24004264					
Method Number	TM304					

Table of Results - Appendix

Method No	Reference	Description
PM024	Modified BS 1377	Soil preparation including homogenisation, moisture screens of soils for Asbestos Containing Material
TM024	Method 4500A & B, AWWA/APHA, 20th Ed., 1999	Determination of Exchangeable Ammonium and Ammoniacal Nitrogen as N by titration on solids
TM048	HSG 248, Asbestos: The analysts' guide for sampling, analysis and clearance procedures	Identification of Asbestos in Bulk Material
TM062 (S)	National Grid Property Holdings Methods for the Collection & Analysis of Samples from National Grid Sites version 1 Sec 3.9	Determination of Phenols in Soils by HPLC
TM089	Modified: US EPA Methods 8020 & 602	Determination of Gasoline Range Hydrocarbons (GRO) by Headspace GC-FID (C4-C12)
TM116	Modified: US EPA Method 8260, 8120, 8020, 624, 610 & 602	Determination of Volatile Organic Compounds by Headspace / GC-MS
TM132	In - house Method	ELTRA CS800 Operators Guide
TM133	BS 1377: Part 3 1990;BS 6068-2.5	Determination of pH in Soil and Water using the GLpH pH Meter
TM153	Method 4500A,B,C, I, M AWWA/APHA, 20th Ed., 1999	Determination of Total Cyanide, Free (Easily Liberatable) Cyanide and Thiocyanate using the Skalar SANS+ System Segmented Flow Analyser
TM181	US EPA Method 6010B	Determination of Routine Metals in Soil by iCap 6500 Duo ICP-OES
TM218	Shaker extraction - EPA method 3546.	The determination of PAH in soil samples by GC-MS
TM304	HSE Contract research Report no 83/1996	Asbestos Quantification in Soil: Fibres identified by morphology only
TM414	Analysis of Petroleum Hydrocarbons in Environmental Media – Total Petroleum Hydrocarbon Criteria	Determination of Speciated Extractable Petroleum Hydrocarbons in Soils by GCxGC-FID

NA = not applicable.

Chemical testing (unless subcontracted) performed at ALS Life Sciences Ltd Hawarden (Method codes TM) or ALS Life Sciences Ltd Aberdeen (Method codes S).

CERTIFICATE OF ANALYSIS

SDG:	210331-78	**Client Reference:**	P18-669	**Report Number:**	593957
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	593510

Test Completion Dates

Lab Sample No(s)	24004278	24004378	24004243	24004251	24004257	24004264	24004269	24004283	24004293	24004353
Customer Sample Ref.	R101-1	R102-2	R102-3	R102-4	R102-5	R102-6	R102-7	R106-1	R106-2	R127-1
AGS Ref.										
Depth	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
Ammonium Soil by Titration	08-Apr-2021	08-Apr-2021	08-Apr-2021	08-Apr-2021	08-Apr-2021	08-Apr-2021	08-Apr-2021	08-Apr-2021	08-Apr-2021	08-Apr-2021
Asbestos ID in Solid Samples	08-Apr-2021	08-Apr-2021		07-Apr-2021		07-Apr-2021			07-Apr-2021	07-Apr-2021
Asbestos Quantification - Full						14-Apr-2021				
Cyanide Comp/Free/Total/Thiocyanate	08-Apr-2021	08-Apr-2021	08-Apr-2021	08-Apr-2021	08-Apr-2021	08-Apr-2021	08-Apr-2021	08-Apr-2021	08-Apr-2021	08-Apr-2021
EPH CWG GC (S)	08-Apr-2021	07-Apr-2021	06-Apr-2021	06-Apr-2021	07-Apr-2021	07-Apr-2021	07-Apr-2021	07-Apr-2021	07-Apr-2021	07-Apr-2021
GRO by GC-FID (S)	06-Apr-2021	06-Apr-2021	06-Apr-2021	06-Apr-2021	06-Apr-2021	06-Apr-2021	06-Apr-2021	07-Apr-2021	06-Apr-2021	01-Apr-2021
Metals in solid samples by OES	08-Apr-2021	08-Apr-2021	08-Apr-2021	08-Apr-2021	07-Apr-2021	08-Apr-2021	08-Apr-2021	08-Apr-2021	08-Apr-2021	08-Apr-2021
PAH by GCMS	07-Apr-2021	07-Apr-2021	08-Apr-2021	07-Apr-2021	07-Apr-2021	07-Apr-2021	08-Apr-2021	07-Apr-2021	06-Apr-2021	06-Apr-2021
pH	06-Apr-2021	06-Apr-2021	01-Apr-2021	07-Apr-2021	01-Apr-2021	06-Apr-2021	01-Apr-2021	01-Apr-2021	06-Apr-2021	07-Apr-2021
Phenols by HPLC (S)	08-Apr-2021	08-Apr-2021	08-Apr-2021	08-Apr-2021	08-Apr-2021	08-Apr-2021	08-Apr-2021	08-Apr-2021	01-Apr-2021	01-Apr-2021
Sample description	01-Apr-2021	31-Mar-2021	31-Mar-2021	31-Mar-2021	31-Mar-2021	31-Mar-2021	31-Mar-2021	31-Mar-2021	31-Mar-2021	31-Mar-2021
Total Organic Carbon	09-Apr-2021	09-Apr-2021	09-Apr-2021	09-Apr-2021	09-Apr-2021	09-Apr-2021	09-Apr-2021	09-Apr-2021	08-Apr-2021	09-Apr-2021
TPH CWG GC (S)	08-Apr-2021	07-Apr-2021	06-Apr-2021	06-Apr-2021	07-Apr-2021	07-Apr-2021	07-Apr-2021	07-Apr-2021	07-Apr-2021	07-Apr-2021
VOC MS (S)	06-Apr-2021	01-Apr-2021	01-Apr-2021	01-Apr-2021	01-Apr-2021	01-Apr-2021	01-Apr-2021	01-Apr-2021	01-Apr-2021	01-Apr-2021

Lab Sample No(s)	24004362	24004368	24004298	24004304	24004326	24004234	24004311	24004335	24004343
Customer Sample Ref.	R127-2	R127-3	R-135-1	R-135-2	W-89-1	W-208-4-1	W-208-4-2	W-208-4-3	W-208-4-4
AGS Ref.									
Depth	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
Ammonium Soil by Titration	08-Apr-2021	08-Apr-2021	08-Apr-2021	08-Apr-2021	08-Apr-2021	08-Apr-2021	08-Apr-2021	08-Apr-2021	08-Apr-2021
Asbestos ID in Solid Samples		07-Apr-2021		08-Apr-2021		07-Apr-2021		07-Apr-2021	
Cyanide Comp/Free/Total/Thiocyanate	08-Apr-2021	08-Apr-2021	08-Apr-2021	08-Apr-2021	08-Apr-2021	08-Apr-2021	08-Apr-2021	08-Apr-2021	08-Apr-2021
EPH CWG GC (S)	07-Apr-2021	07-Apr-2021	07-Apr-2021	07-Apr-2021	07-Apr-2021	07-Apr-2021	07-Apr-2021	07-Apr-2021	07-Apr-2021
GRO by GC-FID (S)	01-Apr-2021	01-Apr-2021	07-Apr-2021	07-Apr-2021	06-Apr-2021	01-Apr-2021	01-Apr-2021	01-Apr-2021	01-Apr-2021
Metals in solid samples by OES	08-Apr-2021	08-Apr-2021	08-Apr-2021	08-Apr-2021	08-Apr-2021	08-Apr-2021	08-Apr-2021	08-Apr-2021	08-Apr-2021
PAH by GCMS	07-Apr-2021	07-Apr-2021	07-Apr-2021	07-Apr-2021	07-Apr-2021	07-Apr-2021	07-Apr-2021	07-Apr-2021	07-Apr-2021
pH	07-Apr-2021	06-Apr-2021	01-Apr-2021	06-Apr-2021	01-Apr-2021	07-Apr-2021	01-Apr-2021	06-Apr-2021	31-Mar-2021
Phenols by HPLC (S)	01-Apr-2021	01-Apr-2021	08-Apr-2021	08-Apr-2021	08-Apr-2021	01-Apr-2021	01-Apr-2021	01-Apr-2021	01-Apr-2021
Sample description	31-Mar-2021	31-Mar-2021	01-Apr-2021	01-Apr-2021	01-Apr-2021	31-Mar-2021	31-Mar-2021	31-Mar-2021	31-Mar-2021
Total Organic Carbon	09-Apr-2021	09-Apr-2021	08-Apr-2021	09-Apr-2021	08-Apr-2021	09-Apr-2021	09-Apr-2021	09-Apr-2021	09-Apr-2021
TPH CWG GC (S)	07-Apr-2021	07-Apr-2021	07-Apr-2021	07-Apr-2021	07-Apr-2021	07-Apr-2021	07-Apr-2021	07-Apr-2021	07-Apr-2021
VOC MS (S)	01-Apr-2021	01-Apr-2021	06-Apr-2021	06-Apr-2021	06-Apr-2021	01-Apr-2021	01-Apr-2021	01-Apr-2021	01-Apr-2021

Appendix General

1. Results are expressed on a dry weight basis (dried at 35ºC) for all soil analyses except for the following: NRA and CEN Leach tests, flash point LOI, pH, ammonium as NH4 by the BRE method, VOC TICs and SVOC TICs.

2. If sufficient sample is received a sub sample will be retained free of charge for 30 days after analysis is completed (e-mailed) for all sample types unless the sample is destroyed on testing. The prepared soil sub sample that is analysed for asbestos will be retained for a period of 6 months after the analysis date. All bulk samples will be retained for a period of 6 months after the analysis date. All samples received and not scheduled will be disposed of one month after the date of receipt unless we are instructed to the contrary. Once the initial period has expired, a storage charge will be applied for each month or part thereof until the client cancels the request for sample storage. ALS reserve the right to charge for samples received and stored but not analysed.

3. With respect to turnaround, we will always endeavour to meet client requirements wherever possible, but turnaround times cannot be absolutely guaranteed due to so many variables beyond our control.

4. We take responsibility for any test performed by sub-contractors (marked with an asterisk). We endeavour to use UKAS/MCERTS Accredited Laboratories, who either complete a quality questionnaire or are audited by ourselves. For some determinands there are no UKAS/MCERTS Accredited Laboratories, in this instance a laboratory with a known track record will be utilised.

5. If no separate volatile sample is supplied by the client, or if a headspace or sediment is present in the volatile sample, the integrity of the data may be compromised. This will be flagged up as an invalid VOC on the test schedule and the result marked as deviating on the test certificate.

6. NDP - No determination possible due to insufficient/unsuitable sample.

7. Results relate only to the items tested.

8. LoDs (Limit of Detection) for wet tests reported on a dry weight basis are not corrected for moisture content.

9. **Surrogate recoveries** - Surrogates are added to your sample to monitor recovery of the test requested. A % recovery is reported, results are not corrected for the recovery measured. Typical recoveries for organics tests are 70-130%. Recoveries in soils are affected by organic rich or clay rich matrices. Waters can be affected by remediation fluids or high amounts of sediment. Test results are only ever reported if all of the associated quality checks pass; it is assumed that all recoveries outside of the values above are due to matrix affect.

10. Stones/debris are not routinely removed. We always endeavour to take a representative sub sample from the received sample.

11. In certain circumstances the method detection limit may be elevated due to the sample being outside the calibration range. Other factors that may contribute to this include possible interferences. In both cases the sample would be diluted which would cause the method detection limit to be raised.

12. Mercury results quoted on soils will not include volatile mercury as the analysis is performed on a dried and crushed sample.

13. For leachate preparations other than Zero Headspace Extraction (ZHE) volatile loss may occur.

14. For the BSEN 12457-3 two batch process to allow the cumulative release to be calculated, the volume of the leachate produced is measured and filtered for all tests. We therefore cannot carry out any unfiltered analysis. The tests affected include volatiles GCFID/GCMS and all subcontracted analysis.

15. Analysis and identification of specific compounds using GCFID is by retention time only, and we routinely calibrate and quantify for benzene, toluene, ethylbenzenes and xylenes (BTEX). For total volatiles in the C5-C12 range, the total area of the chromatogram is integrated and expressed as ug/kg or ug/l. Although this analysis is commonly used for the quantification of gasoline range organics (GRO), the system will also detect other compounds such as chlorinated solvents, and this may lead to a falsely high result with respect to hydrocarbons only. It is not possible to specifically identify these non-hydrocarbons, as standards are not routinely run for any other compounds, and for more definitive identification, volatiles by GCMS should be utilised.

16. We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample. Other coarse granular material such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

17. **Tentatively Identified Compounds (TICs)** are non-target peaks in VOC and SVOC analysis. All non-target peaks detected with a concentration above the LoD are subjected to a mass spectral library search. Non-target peaks with a library search confidence of >75% are reported based on the best mass spectral library match. When a non-target peak with a library search confidence of <75% is detected it is reported as "mixed hydrocarbons". Non-target compounds identified from the scan data are semi-quantified relative to one of the deuterated internal standards, under the same chromatographic conditions as the target compounds. This result is reported as a semi-quantitative value and reported as Tentatively Identified Compounds (TICs). TICs are outside the scope of UKAS accreditation and are not moisture corrected.

18. **Sample Deviations**

If a sample is classed as deviated then the associated results may be compromised.

1	**Container with Headspace provided for volatiles analysis**
2	**Incorrect container received**
3	**Deviation from method**
4	**Matrix interference**
♦	**Sample holding time exceeded in laboratory**
@	**Sample holding time exceeded due to late arrival of instructions or samples**
§	**Sampled on date not provided**

19. **Asbestos**

When requested, the individual sub sample scheduled will be analysed in house for the presence of asbestos fibres and asbestos containing material by our documented in house method TM048 based on HSG 248 (2005), which is accredited to ISO17025. If a specific asbestos fibre type is not found this will be reported as "Not detected". If no asbestos fibre types are found all will be reported as "Not detected" and the sub sample analysed deemed to be clear of asbestos. If an asbestos fibre type is found it will be reported as detected (for each fibre type found). Testing can be carried out on asbestos positive samples, but, due to Health and Safety considerations, may be replaced by alternative tests or reported as No Determination Possible (NDP). The quantity of asbestos present is not determined unless specifically requested.

Identification of Asbestos in Bulk Materials & Soils

The results for identification of asbestos in bulk materials are obtained from supplied bulk materials which have been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

The results for identification of asbestos in soils are obtained from a homogenised sub sample which has been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

Asbestos Type	Common Name
Chrysotile	White Asbestos
Amosite	Brown Asbestos
Crocidolite	Blue Asbestos
Fibrous Actinolite	-
Fibrous Anthophyllite	-
Fibrous Tremolite	-

Visual Estimation Of Fibre Content

Estimation of fibre content is not permitted as part of our UKAS accredited test other than: - Trace - Where only one or two asbestos fibres were identified.

Respirable Fibres

Respirable fibres are defined as fibres of <3 µm diameter, longer than 5 µm and with aspect ratios of at least 3:1 that can be inhaled into the lower regions of the lung and are generally acknowledged to be most important predictor of hazard and risk for cancers of the lung.
Standing Committee of Analysts, *The Quantification of Asbestos in Soil (2017).*

Further guidance on typical asbestos fibre content of manufactured products can be found in HSG 264.

The identification of asbestos containing materials and soils falls within our schedule of tests for which we hold UKAS accreditation, however opinions, interpretations and all other information contained in the report are outside the scope of UKAS accreditation.

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Rodgers Leask
Office 225
2430/2440
Aztec West
Almondsbury
Bristol
BS32 4QA

Attention: Elliot Thomas

CERTIFICATE OF ANALYSIS

Date of report Generation:	22 April 2021
Customer:	Rodgers Leask
Sample Delivery Group (SDG):	210415-79
Your Reference:	P18-669
Location:	Llanwern
Report No:	595125

This report has been revised and directly supersedes 595077 in its entirety.

We received 16 samples on Thursday April 15, 2021 and 16 of these samples were scheduled for analysis which was completed on Thursday April 22, 2021. Accredited laboratory tests are defined within the report, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation.

Should this report require incorporation into client reports, it must be used in its entirety and not simply with the data sections alone.

Chemical testing (unless subcontracted) performed at ALS Life Sciences Ltd Hawarden (Method codes TM) or ALS Life Sciences Ltd Aberdeen (Method codes S).

All sample data is provided by the customer. The reported results relate to the sample supplied, and on the basis that this data is correct.
Incorrect sampling dates and/or sample information will affect the validity of results.
The customer is not permitted to reproduce this report except in full without the approval of the laboratory.

Approved By:

Sonia McWhan

Operations Manager

ALS Life Sciences Limited. Registered Office: Units 7 & 8 Hawarden Business Park, Manor Road, Hawarden, Deeside, CH5 3US. Registered in England and Wales No. 4057291.

CERTIFICATE OF ANALYSIS

SDG:	210415-79	**Client Reference:**	P18-669	**Report Number:**	595125
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	595077

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
24079820	3CBB-1		0.20 - 0.20	13/04/2021
24079830	3CBB-2		0.20 - 0.20	13/04/2021
24079835	3CBB-3		0.20 - 0.20	13/04/2021
24079841	3CBB-4		0.20 - 0.20	13/04/2021
24079787	R108-1		0.20 - 0.20	13/04/2021
24079893	R112-1		0.20 - 0.20	13/04/2021
24079795	R112-2		0.20 - 0.20	13/04/2021
24079802	R112-3		0.20 - 0.20	13/04/2021
24079809	R113-1		0.20 - 0.20	13/04/2021
24079815	R113-2		0.20 - 0.20	13/04/2021
24079859	R138-1		0.20 - 0.20	13/04/2021
24079871	R138-2		0.20 - 0.20	13/04/2021
24079875	R138-3		0.20 - 0.20	13/04/2021
24079881	R138-4		0.20 - 0.20	13/04/2021
24079888	R139-1		0.20 - 0.20	13/04/2021
24079846	W182-1		0.20 - 0.20	13/04/2021

Only received samples which have had analysis scheduled will be shown on the following pages.

Validated

CERTIFICATE OF ANALYSIS

SDG:	210415-79	**Client Reference:**	P18-669	**Report Number:**	595125
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	595077

Results Legend

X Test

N No Determination Possible

Sample Types -

S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

Lab Sample No(s)			24079820		24079830		24079835		24079841		24079787		24079893		24079795		24079802	
Customer Sample Reference			3CBB-1		3CBB-2		3CBB-3		3CBB-4		R108-1		R112-1		R112-2		R112-3	
AGS Reference																		
Depth (m)			0.20 - 0.20		0.20 - 0.20		0.20 - 0.20		0.20 - 0.20		0.20 - 0.20		0.20 - 0.20		0.20 - 0.20		0.20 - 0.20	
Container			250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)
Sample Type			S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
Ammonium Soil by Titration	All	NDPs: 0 Tests: 16	X			X		X			X		X			X		X			X
Asbestos ID in Solid Samples	All	NDPs: 0 Tests: 8			X					X					X					X	
Asbestos Quantification - Full	All	NDPs: 0 Tests: 3													X					X	
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 16	X			X		X			X		X			X		X			X
EPH CWG GC (S)	All	NDPs: 0 Tests: 16	X			X		X			X		X			X		X			X
GRO by GC-FID (S)	All	NDPs: 0 Tests: 16		X			X		X			X		X			X		X		
Metals in solid samples by OES	All	NDPs: 0 Tests: 16	X			X		X			X		X			X		X			X
PAH by GCMS	All	NDPs: 0 Tests: 16	X			X		X			X		X			X		X			X
pH	All	NDPs: 0 Tests: 16	X			X		X			X		X			X		X			X
Phenols by HPLC (S)	All	NDPs: 0 Tests: 16	X			X		X			X		X			X		X			X
Sample description	All	NDPs: 0 Tests: 15	X			X					X		X			X		X			X
Total Organic Carbon	All	NDPs: 0 Tests: 16	X			X		X			X		X			X		X			X
TPH CWG GC (S)	All	NDPs: 0 Tests: 16	X			X		X			X		X			X		X			X
VOC MS (S)	All	NDPs: 0 Tests: 16		X			X		X			X		X			X		X		

24079846	W182-1		0.20 - 0.20	60g VOC (ALE215)	S								x										x
				250g Amber Jar (ALE210)	S	x				x	x		x	x	x	x	x	x	x	x			
24079888	R139-1		0.20 - 0.20	60g VOC (ALE215)	S								x										x
				250g Amber Jar (ALE210)	S	x				x	x		x	x	x	x	x	x	x	x			
				1kg TUB with Handle (ALE260)	S		x	x															
24079881	R138-4		0.20 - 0.20	60g VOC (ALE215)	S								x										x
				250g Amber Jar (ALE210)	S	x				x	x		x	x	x	x	x	x	x	x			
24079875	R138-3		0.20 - 0.20	60g VOC (ALE215)	S								x										x
				250g Amber Jar (ALE210)	S	x				x	x		x	x	x	x	x	x	x	x			
				1kg TUB with Handle (ALE260)	S		x																
24079871	R138-2		0.20 - 0.20	60g VOC (ALE215)	S								x										x
				250g Amber Jar (ALE210)	S	x				x	x		x	x	x	x	x	x	x	x			
24079859	R138-1		0.20 - 0.20	60g VOC (ALE215)	S								x										x
				250g Amber Jar (ALE210)	S	x				x	x		x	x	x	x	x	x	x	x			
				1kg TUB with Handle (ALE260)	S		x																
24079815	R113-2		0.20 - 0.20	60g VOC (ALE215)	S								x										x
				250g Amber Jar (ALE210)	S	x				x	x		x	x	x	x	x	x	x	x			
				1kg TUB with Handle (ALE260)	S		x																
24079809	R113-1		0.20 - 0.20	60g VOC (ALE215)	S								x										x
				250g Amber Jar (ALE210)	S	x				x	x		x	x	x	x	x	x	x	x			
24079802	R112-3		0.20 - 0.20	60g VOC (ALE215)	S								x										x

CERTIFICATE OF ANALYSIS

SDG:	210415-79	**Client Reference:**	P18-669	**Report Number:**	595125
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	595077

Sample Descriptions

Grain Sizes

very fine	<0.063mm	**fine**	0.063mm - 0.1mm	**medium**	0.1mm - 2mm	**coarse**	2mm - 10mm	**very coarse**	>10mm

Lab Sample No(s)	Customer Sample Ref.	Depth (m)	Colour	Description	Inclusions	Inclusions 2
24079820	3CBB-1	0.20 - 0.20	Dark Brown	Loamy Sand	Vegetation	Stones
24079830	3CBB-2	0.20 - 0.20	Dark Brown	Sand	Vegetation	Stones
24079835	3CBB-3	0.20 - 0.20	Dark Brown	Sand	Vegetation	Stones
24079841	3CBB-4	0.20 - 0.20	Dark Brown	Clay Loam	Stones	Vegetation
24079787	R108-1	0.20 - 0.20	Dark Brown	Loamy Sand	Stones	Brick
24079893	R112-1	0.20 - 0.20	Dark Brown	Loamy Sand	Stones	Vegetation
24079795	R112-2	0.20 - 0.20	Grey	Sandy Loam	Stones	None
24079802	R112-3	0.20 - 0.20	Dark Brown	Sandy Loam	Stones	Vegetation
24079809	R113-1	0.20 - 0.20	Dark Brown	Sandy Loam	Stones	Vegetation
24079815	R113-2	0.20 - 0.20	Dark Brown	Sand	Vegetation	Stones
24079859	R138-1	0.20 - 0.20	Dark Brown	Loamy Sand	Stones	None
24079871	R138-2	0.20 - 0.20	Dark Brown	Loamy Sand	Stones	Concrete/Aggregate
24079875	R138-3	0.20 - 0.20	Dark Brown	Sand	None	Stones
24079881	R138-4	0.20 - 0.20	Dark Brown	Sand	Vegetation	Stones
24079888	R139-1	0.20 - 0.20	Dark Brown	Sand	Vegetation	Stones
24079846	W182-1	0.20 - 0.20	Dark Brown	Loamy Sand	Stones	None

These descriptions are only intended to act as a cross check if sample identities are questioned, and to provide a log of sample matrices with respect to MCERTS validation. They are not intended as full geological descriptions.

We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally ocurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample.

Other coarse granular materials such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

Validated

CERTIFICATE OF ANALYSIS

SDG:	210415-79	**Client Reference:**	P18-669	**Report Number:**	595125
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	595077

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	3CBB-1	3CBB-2	3CBB-3	3CBB-4	R108-1	R112-1
			Depth (m)	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	13/04/2021	13/04/2021	13/04/2021	13/04/2021	13/04/2021	13/04/2021
			Sample Time	.	.	.	.	.	.
			Date Received	15/04/2021	15/04/2021	15/04/2021	15/04/2021	15/04/2021	15/04/2021
			SDG Ref	210415-79	210415-79	210415-79	210415-79	210415-79	210415-79
			Lab Sample No.(s)	24079820	24079830	24079835	24079841	24079787	24079893
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		18	15	7.8	15	4.2	16
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	<12 M	<12 M	<12 M	<12 M	<12 M
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	0.0651 M	0.0118 M	<0.01 M	<0.01 M
Cresols	<0.01 mg/kg	TM062 (S)		0.0121 M	0.0118 M	0.0109 M	0.0354 M	<0.01 M	<0.01 M
Xylenols	<0.015 mg/kg	TM062 (S)		0.0363 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M	0.0476 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		0.0484 M	<0.035 M	0.076 M	0.0472 M	<0.035 M	0.0476 M
Soil Organic Matter (SOM)	<0.35 %	TM132		4.88 #	4.22 #	4.72 #	4.22 #	2.03 #	3.97 #
pH	1 pH Units	TM133		8.15 M	8.46 M	8.57 M	8.26 M	9.27 M	12.3 M
Cyanide, Total	<1 mg/kg	TM153		<1 M	<1 M	<1 M	<1 M	<1 M	<1 M
Arsenic	<0.6 mg/kg	TM181		11.6 M	13.7 M	10.2 M	11 M	5.96 M	7.1 M
Cadmium	<0.02 mg/kg	TM181		0.319 M	0.271 M	<0.02 M	0.113 M	0.178 M	0.234 M
Chromium	<0.9 mg/kg	TM181		27.9 M	63 M	156 M	71.1 M	320 M	71.5 M
Copper	<1.4 mg/kg	TM181		20.7 M	20 M	24.7 M	20.8 M	19.7 M	16.2 M
Iron	<1000 mg/kg	TM181		31100 #	35900 #	92700 #	43700 #	147000 #	53400 #
Lead	<0.7 mg/kg	TM181		36.3 M	28.5 M	22.1 M	29.1 M	66.3 M	30.4 M
Manganese	<0.13 mg/kg	TM181		1020 M	2280 M	8510 M	4100 M	21600 M	6800 M
Mercury	<0.1 mg/kg	TM181		<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M
Nickel	<0.2 mg/kg	TM181		28.5 M	25.8 M	22.3 M	22.7 M	12.6 M	13.5 M
Selenium	<1 mg/kg	TM181		<1 #	<1 #	3.19 #	1.76 #	6.44 #	3.61 #
Vanadium	<0.2 mg/kg	TM181		42 #	55.6 #	148 #	75.6 #	410 #	129 #
Zinc	<1.9 mg/kg	TM181		162 M	146 M	241 M	127 M	213 M	113 M
Asbestos Quantification - Gravimetric - %	<0.001 %	TM304							<0.001 #
Asbestos Quantification - PCOM Evaluation - %	<0.001 %	TM304							<0.001 #
Additional Asbestos Components (Using TM048)		TM304							None #
Analysts Comments		TM304							0
Asbestos Quantification - Total - %	<0.001 %	TM304							<0.001 #

Validated

CERTIFICATE OF ANALYSIS

SDG:	210415-79	**Client Reference:**	P18-669	**Report Number:**	595125
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	595077

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	R112-2	R112-3	R113-1	R113-2	R138-1	R138-2
			Depth (m)	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	13/04/2021	13/04/2021	13/04/2021	13/04/2021	13/04/2021	13/04/2021
			Sample Time	.	.	.	.	.	.
			Date Received	15/04/2021	15/04/2021	15/04/2021	15/04/2021	15/04/2021	15/04/2021
			SDG Ref	210415-79	210415-79	210415-79	210415-79	210415-79	210415-79
			Lab Sample No.(s)	24079795	24079802	24079809	24079815	24079859	24079871
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		9.5	6.1	14	11	10	9.1
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	<12 M	<12 M	<12 M	<12 M	<12 M
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M	0.022 M
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M	0.0112 M	0.011 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M
Soil Organic Matter (SOM)	<0.35 %	TM132		4.31 #	5.84 #	7.93 #	5.15 #	6.14 #	4.5 #
pH	1 pH Units	TM133		12.6 M	9.89 M	8.8 M	8.67 M	10.2 M	12.6 M
Cyanide, Total	<1 mg/kg	TM153		<1 M	<1 M	<1 M	<1 M	<1 M	<1 M
Arsenic	<0.6 mg/kg	TM181		9.92 M	7.76 M	18.6 M	16.4 M	5.76 M	9.15 M
Cadmium	<0.02 mg/kg	TM181		0.925 M	0.278 M	0.803 M	0.576 M	0.314 M	<0.02 M
Chromium	<0.9 mg/kg	TM181		92.9 M	92.8 M	45.6 M	40.3 M	623 M	360 M
Copper	<1.4 mg/kg	TM181		23.2 M	19.4 M	33.1 M	28.3 M	21.6 M	45.2 M
Iron	<1000 mg/kg	TM181		63800 #	74600 #	44200 #	37500 #	157000 #	156000 #
Lead	<0.7 mg/kg	TM181		94.9 M	42.3 M	94.5 M	71.8 M	54.6 M	15.6 M
Manganese	<0.13 mg/kg	TM181		10500 M	13300 M	16600 M	16700 M	35900 M	29700 M
Mercury	<0.1 mg/kg	TM181		<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M
Nickel	<0.2 mg/kg	TM181		13.4 M	17 M	23.4 M	22.8 M	10.3 M	11.9 M
Selenium	<1 mg/kg	TM181		5.11 #	4.75 #	7.98 #	7.25 #	10.2 #	8.8 #
Vanadium	<0.2 mg/kg	TM181		152 #	162 #	44.2 #	40.7 #	647 #	402 #
Zinc	<1.9 mg/kg	TM181		685 M	184 M	1120 M	545 M	328 M	95.4 M
Asbestos Quantification - Gravimetric - %	<0.001 %	TM304			<0.001 #				
Asbestos Quantification - PCOM Evaluation - %	<0.001 %	TM304			<0.001 #				
Additional Asbestos Components (Using TM048)		TM304			None #				
Analysts Comments		TM304			0				
Asbestos Quantification - Total - %	<0.001 %	TM304			<0.001 #				

Validated

CERTIFICATE OF ANALYSIS

SDG:	210415-79	**Client Reference:**	P18-669	**Report Number:**	595125
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	595077

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	R138-3	R138-4	R139-1	W182-1		
			Depth (m)	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20		
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)		
			Date Sampled	13/04/2021	13/04/2021	13/04/2021	13/04/2021		
			Sample Time	.	.	.	.		
			Date Received	15/04/2021	15/04/2021	15/04/2021	15/04/2021		
			SDG Ref	210415-79	210415-79	210415-79	210415-79		
			Lab Sample No.(s)	24079875	24079881	24079888	24079846		
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		8.8	10	5.8	9.8		
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	18.1 M	<12 M	<12 M		
Phenol	<0.01 mg/kg	TM062 (S)		0.011 M	0.0111 M	<0.01 M	<0.01 M		
Cresols	<0.01 mg/kg	TM062 (S)		0.011 M	<0.01 M	<0.01 M	0.0111 M		
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M	<0.015 M	<0.015 M		
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 M	<0.035 M	<0.035 M		
Soil Organic Matter (SOM)	<0.35 %	TM132		2.95 #	3.5 #	7.78 #	7.88 #		
pH	1 pH Units	TM133		12.1 M	11.9 M	9.23 M	9.31 M		
Cyanide, Total	<1 mg/kg	TM153		1.25 M	1.01 M	1.05 M	<1 M		
Arsenic	<0.6 mg/kg	TM181		6.59 M	14.6 M	8.3 M	9.06 M		
Cadmium	<0.02 mg/kg	TM181		0.527 M	0.457 M	0.15 M	0.405 M		
Chromium	<0.9 mg/kg	TM181		477 M	403 M	20.4 M	129 M		
Copper	<1.4 mg/kg	TM181		25.8 M	33.4 M	11.9 M	22.7 M		
Iron	<1000 mg/kg	TM181		159000 #	167000 #	41500 #	90200 #		
Lead	<0.7 mg/kg	TM181		56.1 M	75 M	36.2 M	77.9 M		
Manganese	<0.13 mg/kg	TM181		43500 M	36700 M	1560 M	8940 M		
Mercury	<0.1 mg/kg	TM181		<0.1 M	<0.1 M	<0.1 M	<0.1 M		
Nickel	<0.2 mg/kg	TM181		10.4 M	19.8 M	10.4 M	18.1 M		
Selenium	<1 mg/kg	TM181		11.6 #	20.8 #	<1 #	2.86 #		
Vanadium	<0.2 mg/kg	TM181		813 #	781 #	27.4 #	142 #		
Zinc	<1.9 mg/kg	TM181		436 M	351 M	112 M	359 M		
Asbestos Quantification - Gravimetric - %	<0.001 %	TM304				<0.001 #			
Asbestos Quantification - PCOM Evaluation - %	<0.001 %	TM304				<0.001 #			
Additional Asbestos Components (Using TM048)		TM304				None #			
Analysts Comments		TM304				0			
Asbestos Quantification - Total - %	<0.001 %	TM304				<0.001 #			

Validated

CERTIFICATE OF ANALYSIS

SDG:	210415-79	**Client Reference:**	P18-669	**Report Number:**	595125
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	595077

PAH by GCMS

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	3CBB-1	3CBB-2	3CBB-3	3CBB-4	R108-1	R112-1
			Depth (m)	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	13/04/2021	13/04/2021	13/04/2021	13/04/2021	13/04/2021	13/04/2021
			Sample Time	.	.	.	.	.	.
			Date Received	15/04/2021	15/04/2021	15/04/2021	15/04/2021	15/04/2021	15/04/2021
			SDG Ref	210415-79	210415-79	210415-79	210415-79	210415-79	210415-79
			Lab Sample No.(s)	24079820	24079830	24079835	24079841	24079787	24079893
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		87.9	91.1	91.2	89.2	97.3	83.8
Acenaphthene-d10 % recovery**	%	TM218		92.2	94.3	94.4	93	102	88.5
Phenanthrene-d10 % recovery**	%	TM218		86.1	89.3	87.9	87.4	97.3	88
Chrysene-d12 % recovery**	%	TM218		71	72.9	73.5	72.2	80.3	73.2
Perylene-d12 % recovery**	%	TM218		79.1	79.2	82	80.6	86.1	76.8
Naphthalene	<9 µg/kg	TM218		17.5 M	11.5 M	<9 M	14.2 M	9.72 M	42.3 M
Acenaphthylene	<12 µg/kg	TM218		27.3 M	<12 M	<12 M	17.5 M	<12 M	20 M
Acenaphthene	<8 µg/kg	TM218		<8 M	<8 M	<8 M	<8 M	<8 M	10 M
Fluorene	<10 µg/kg	TM218		12.4 M	<10 M	<10 M	<10 M	<10 M	13.4 M
Phenanthrene	<15 µg/kg	TM218		144 M	73.5 M	22 M	91.6 M	69.5 M	170 M
Anthracene	<16 µg/kg	TM218		50.8 M	<16 M	<16 M	24.1 M	20 M	44.5 M
Fluoranthene	<17 µg/kg	TM218		350 M	162 M	51.3 M	280 M	164 M	310 M
Pyrene	<15 µg/kg	TM218		271 M	140 M	45.2 M	239 M	147 M	270 M
Benz(a)anthracene	<14 µg/kg	TM218		173 M	107 M	33.5 M	158 M	118 M	187 M
Chrysene	<10 µg/kg	TM218		179 M	121 M	43.8 M	160 M	130 M	208 M
Benzo(b)fluoranthene	<15 µg/kg	TM218		268 M	223 M	71.8 M	156 M	232 M	403 M
Benzo(k)fluoranthene	<14 µg/kg	TM218		79 M	74.1 M	26.7 M	86.6 M	92.3 M	122 M
Benzo(a)pyrene	<15 µg/kg	TM218		177 M	127 M	38.5 M	179 M	134 M	192 M
Indeno(1,2,3-cd)pyrene	<18 µg/kg	TM218		224 M	156 M	50.6 M	206 M	167 M	209 M
Dibenzo(a,h)anthracene	<23 µg/kg	TM218		40 M	27.4 M	<23 M	37.6 M	26.9 M	33.4 M
Benzo(g,h,i)perylene	<24 µg/kg	TM218		167 M	118 M	42.4 M	164 M	125 M	192 M
PAH, Total Detected USEPA 16	<118 µg/kg	TM218		2180	1340	426	1810	1440	2430

Validated

CERTIFICATE OF ANALYSIS

SDG:	210415-79	**Client Reference:**	P18-669	**Report Number:**	595125
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	595077

PAH by GCMS

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	R112-2	R112-3	R113-1	R113-2	R138-1	R138-2
			Depth (m)	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	13/04/2021	13/04/2021	13/04/2021	13/04/2021	13/04/2021	13/04/2021
			Sample Time	.	.	.	.	.	.
			Date Received	15/04/2021	15/04/2021	15/04/2021	15/04/2021	15/04/2021	15/04/2021
			SDG Ref	210415-79	210415-79	210415-79	210415-79	210415-79	210415-79
			Lab Sample No.(s)	24079795	24079802	24079809	24079815	24079859	24079871
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		87.8	81.2	90.7	87.5	89.1	89.9
Acenaphthene-d10 % recovery**	%	TM218		89.9	84.8	95	95.5	94.8	95.1
Phenanthrene-d10 % recovery**	%	TM218		84.4	81.7	90.1	91	88.1	88.8
Chrysene-d12 % recovery**	%	TM218		66.5	72.8	74.3	70.5	72.9	73.2
Perylene-d12 % recovery**	%	TM218		68.9	79.4	78.4	75.5	81	81.3
Naphthalene	<9 µg/kg	TM218		48.7 M	150 M	21.6 M	<450 M	154 M	260 M
Acenaphthylene	<12 µg/kg	TM218		<12 M	145 M	<12 M	<600 M	57.1 M	94.2 M
Acenaphthene	<8 µg/kg	TM218		12.5 M	<40 M	<8 M	<400 M	58.6 M	60.2 M
Fluorene	<10 µg/kg	TM218		<10 M	101 M	<10 M	<500 M	45 M	80.2 M
Phenanthrene	<15 µg/kg	TM218		155 M	928 M	60 M	<750 M	967 M	2790 M
Anthracene	<16 µg/kg	TM218		31.1 M	481 M	<16 M	<800 M	189 M	249 M
Fluoranthene	<17 µg/kg	TM218		313 M	1580 M	101 M	<850 M	1890 M	3460 M
Pyrene	<15 µg/kg	TM218		272 M	1150 M	81.9 M	1110 M	1530 M	2570 M
Benz(a)anthracene	<14 µg/kg	TM218		171 M	770 M	56.1 M	<700 M	1350 M	1740 M
Chrysene	<10 µg/kg	TM218		190 M	992 M	71.4 M	800 M	1410 M	2150 M
Benzo(b)fluoranthene	<15 µg/kg	TM218		373 M	1270 M	161 M	1540 M	1970 M	1670 M
Benzo(k)fluoranthene	<14 µg/kg	TM218		98.9 M	355 M	41.3 M	<700 M	916 M	986 M
Benzo(a)pyrene	<15 µg/kg	TM218		178 M	732 M	72.8 M	1010 M	1250 M	1380 M
Indeno(1,2,3-cd)pyrene	<18 µg/kg	TM218		199 M	641 M	88.1 M	1140 M	1370 M	1740 M
Dibenzo(a,h)anthracene	<23 µg/kg	TM218		37.3 M	<115 M	<23 M	<1150 M	280 M	371 M
Benzo(g,h,i)perylene	<24 µg/kg	TM218		176 M	562 M	66 M	<1200 M	1100 M	1390 M
PAH, Total Detected USEPA 16	<118 µg/kg	TM218		2260	9850	822	<5900	14500	21000

Validated

CERTIFICATE OF ANALYSIS

SDG:	210415-79	**Client Reference:**	P18-669	**Report Number:**	595125
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	595077

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
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aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
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*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	R138-3	R138-4	R139-1	W182-1		
			Depth (m)	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20		
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)		
			Date Sampled	13/04/2021	13/04/2021	13/04/2021	13/04/2021		
			Sample Time	.	.	.	.		
			Date Received	15/04/2021	15/04/2021	15/04/2021	15/04/2021		
			SDG Ref	210415-79	210415-79	210415-79	210415-79		
			Lab Sample No.(s)	24079875	24079881	24079888	24079846		
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		92.1	91.1	83.6	79.8		
Acenaphthene-d10 % recovery**	%	TM218		94.6	95.4	87.8	84.9		
Phenanthrene-d10 % recovery**	%	TM218		90.5	90.8	84.2	79.3		
Chrysene-d12 % recovery**	%	TM218		74	76.2	69.9	70		
Perylene-d12 % recovery**	%	TM218		82.3	83	78.7	75.6		
Naphthalene	<9 µg/kg	TM218		72 M	63.4 M	442 M	2400 M		
Acenaphthylene	<12 µg/kg	TM218		35.5 M	31.6 M	3000 M	4070 M		
Acenaphthene	<8 µg/kg	TM218		16.1 M	16.5 M	178 M	178 M		
Fluorene	<10 µg/kg	TM218		17.6 M	21.8 M	3500 M	3560 M		
Phenanthrene	<15 µg/kg	TM218		658 M	680 M	20300 M	24400 M		
Anthracene	<16 µg/kg	TM218		105 M	93.7 M	3180 M	19900 M		
Fluoranthene	<17 µg/kg	TM218		1130 M	1060 M	25100 M	46200 M		
Pyrene	<15 µg/kg	TM218		872 M	796 M	16900 M	33800 M		
Benz(a)anthracene	<14 µg/kg	TM218		597 M	511 M	9470 M	19300 M		
Chrysene	<10 µg/kg	TM218		742 M	659 M	6550 M	23200 M		
Benzo(b)fluoranthene	<15 µg/kg	TM218		1110 M	1030 M	11500 M	12800 M		
Benzo(k)fluoranthene	<14 µg/kg	TM218		360 M	352 M	4280 M	8110 M		
Benzo(a)pyrene	<15 µg/kg	TM218		560 M	389 M	7620 M	16000 M		
Indeno(1,2,3-cd)pyrene	<18 µg/kg	TM218		726 M	656 M	8450 M	17000 M		
Dibenzo(a,h)anthracene	<23 µg/kg	TM218		129 M	141 M	1560 M	3010 M		
Benzo(g,h,i)perylene	<24 µg/kg	TM218		559 M	520 M	6120 M	11700 M		
PAH, Total Detected USEPA 16	<118 µg/kg	TM218		7680	7020	128000	246000		

Validated

CERTIFICATE OF ANALYSIS

SDG:	210415-79	**Client Reference:**	P18-669	**Report Number:**	595125
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	595077

TPH CWG (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	3CBB-1	3CBB-2	3CBB-3	3CBB-4	R108-1	R112-1
			Depth (m)	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	13/04/2021	13/04/2021	13/04/2021	13/04/2021	13/04/2021	13/04/2021
			Sample Time	.	.	.	.	.	.
			Date Received	15/04/2021	15/04/2021	15/04/2021	15/04/2021	15/04/2021	15/04/2021
			SDG Ref	210415-79	210415-79	210415-79	210415-79	210415-79	210415-79
			Lab Sample No.(s)	24079820	24079830	24079835	24079841	24079787	24079893
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		77.7	85.2	83.1	76.6	93.4	108
Aliphatics >C5-C6	<10 µg/kg	TM089		<10	<10	<10	<10	<10	<10
Aliphatics >C6-C8	<10 µg/kg	TM089		<10	<10	<10	<10	<10	<10
Aliphatics >C8-C10	<10 µg/kg	TM089		<10	<10	<10	<10	<10	<10
Aliphatics >C10-C12	<1000 µg/kg	TM414		<1000	<1000	<1000	<1000	<1000	<1000
Aliphatics >C12-C16	<1000 µg/kg	TM414		<1000	<1000	<1000	<1000	<1000	<1000
Aliphatics >C16-C21	<1000 µg/kg	TM414		<1000	<1000	1800	<1000	<1000	4530
Aliphatics >C21-C35	<1000 µg/kg	TM414		7010	8000	20400	6000	19200	17900
Aliphatics >C35-C44	<1000 µg/kg	TM414		<1000	<1000	3420	<1000	6760	2380
Total Aliphatics >C10-C44	<5000 µg/kg	TM414		8510	9480	25600	7550	26900	25400
Total Aliphatics & Aromatics >C10-C44	<10000 µg/kg	TM414		24100	31400	78400	50300	51500	35200
Aromatics >EC5-EC7	<10 µg/kg	TM089		<10	<10	<10	<10	<10	<10
Aromatics >EC7-EC8	<10 µg/kg	TM089		<10	<10	<10	<10	<10	<10
Aromatics >EC8-EC10	<10 µg/kg	TM089		<10	<10	<10	<10	<10	<10
Aromatics > EC10-EC12	<1000 µg/kg	TM414		<1000	<1000	<1000	<1000	<1000	<1000
Aromatics > EC12-EC16	<1000 µg/kg	TM414		<1000	<1000	<1000	<1000	<1000	<1000
Aromatics > EC16-EC21	<1000 µg/kg	TM414		1300	1540	2530	1810	1630	<1000
Aromatics > EC21-EC35	<1000 µg/kg	TM414		11300	15600	42600	27300	20900	8110
Aromatics >EC35-EC44	<1000 µg/kg	TM414		2970	4720	7680	13700	2060	<1000
Aromatics > EC40-EC44	<1000 µg/kg	TM414		<1000	<1000	1660	3150	<1000	<1000
Total Aromatics > EC10-EC44	<5000 µg/kg	TM414		15600	21900	52800	42800	24600	9780
Total Aliphatics & Aromatics >C5-C44	<10000 µg/kg	TM414		24100	31400	78400	50300	51500	35200
Total Aliphatics >C5-C10	<50 µg/kg	TM089		<50	<50	<50	<50	<50	<50
Total Aromatics >EC5-EC10	<50 µg/kg	TM089		<50	<50	<50	<50	<50	<50
GRO >C5-C10	<20 µg/kg	TM089		<20	<20	<20	<20	<20	<20

Validated

CERTIFICATE OF ANALYSIS

SDG:	210415-79	**Client Reference:**	P18-669	**Report Number:**	595125
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	595077

TPH CWG (S)

Results Legend

#	ISO17025 accredited.
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aq	Aqueous / settled sample.
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**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	R112-2	R112-3	R113-1	R113-2	R138-1	R138-2
			Depth (m)	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	13/04/2021	13/04/2021	13/04/2021	13/04/2021	13/04/2021	13/04/2021
			Sample Time	.	.	.	.	.	.
			Date Received	15/04/2021	15/04/2021	15/04/2021	15/04/2021	15/04/2021	15/04/2021
			SDG Ref	210415-79	210415-79	210415-79	210415-79	210415-79	210415-79
			Lab Sample No.(s)	24079795	24079802	24079809	24079815	24079859	24079871
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		85.7	110	76	65.9 4	78.9	73.7
Aliphatics >C5-C6	<10 µg/kg	TM089		<10	<10	<10	<10 4	<10	<10
Aliphatics >C6-C8	<10 µg/kg	TM089		<10	<10	<10	<10 4	<10	<10
Aliphatics >C8-C10	<10 µg/kg	TM089		<10	<10	<10	<10 4	<10	<10
Aliphatics >C10-C12	<1000 µg/kg	TM414		<1000	<1000	<1000	<1000	<1000	<1000
Aliphatics >C12-C16	<1000 µg/kg	TM414		<1000	<1000	<1000	<1000	<1000	2700
Aliphatics >C16-C21	<1000 µg/kg	TM414		3180	<1000	8020	3830	2350	11300
Aliphatics >C21-C35	<1000 µg/kg	TM414		12100	15400	56100	28600	19800	62900
Aliphatics >C35-C44	<1000 µg/kg	TM414		3640	4230	20700	3840	7520	23300
Total Aliphatics >C10-C44	<5000 µg/kg	TM414		19300	20300	85900	36900	30100	100000
Total Aliphatics & Aromatics >C10-C44	<10000 µg/kg	TM414		37300	135000	140000	83900	84000	183000
Aromatics >EC5-EC7	<10 µg/kg	TM089		<10	<10	<10	<10 4	<10	<10
Aromatics >EC7-EC8	<10 µg/kg	TM089		<10	<10	<10	<10 4	<10	<10
Aromatics >EC8-EC10	<10 µg/kg	TM089		<10	<10	<10	<10 4	<10	<10
Aromatics > EC10-EC12	<1000 µg/kg	TM414		<1000	<1000	<1000	<1000	<1000	<1000
Aromatics > EC12-EC16	<1000 µg/kg	TM414		<1000	2600	1370	<1000	<1000	1340
Aromatics > EC16-EC21	<1000 µg/kg	TM414		2220	44200	3840	2980	6070	16800
Aromatics > EC21-EC35	<1000 µg/kg	TM414		14400	62700	45600	32800	42200	58600
Aromatics >EC35-EC44	<1000 µg/kg	TM414		1030	4770	3320	10500	5510	5480
Aromatics > EC40-EC44	<1000 µg/kg	TM414		<1000	<1000	<1000	1080	<1000	<1000
Total Aromatics > EC10-EC44	<5000 µg/kg	TM414		18000	115000	54100	47000	54000	82500
Total Aliphatics & Aromatics >C5-C44	<10000 µg/kg	TM414		37300	135000	140000	83900	84000	183000
Total Aliphatics >C5-C10	<50 µg/kg	TM089		<50	<50	<50	<50 4	<50	<50
Total Aromatics >EC5-EC10	<50 µg/kg	TM089		<50	<50	<50	<50 4	<50	<50
GRO >C5-C10	<20 µg/kg	TM089		<20	<20	<20	<20 4	<20	<20

Validated

CERTIFICATE OF ANALYSIS

SDG:	210415-79	**Client Reference:**	P18-669	**Report Number:**	595125
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	595077

TPH CWG (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	R138-3	R138-4	R139-1	W182-1		
			Depth (m)	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20		
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)		
			Date Sampled	13/04/2021	13/04/2021	13/04/2021	13/04/2021		
			Sample Time	.	.	.	.		
			Date Received	15/04/2021	15/04/2021	15/04/2021	15/04/2021		
			SDG Ref	210415-79	210415-79	210415-79	210415-79		
			Lab Sample No.(s)	24079875	24079881	24079888	24079846		
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		100	104	94.2	71.3		
Aliphatics >C5-C6	<10 µg/kg	TM089		<10	<10	<10	<10		
Aliphatics >C6-C8	<10 µg/kg	TM089		<10	<10	<10	<10		
Aliphatics >C8-C10	<10 µg/kg	TM089		<10	<10	<10	<10		
Aliphatics >C10-C12	<1000 µg/kg	TM414		<1000	<1000	<1000	<1000		
Aliphatics >C12-C16	<1000 µg/kg	TM414		<1000	<1000	<1000	1680		
Aliphatics >C16-C21	<1000 µg/kg	TM414		6170	3770	1280	15100		
Aliphatics >C21-C35	<1000 µg/kg	TM414		49500	36100	10900	70800		
Aliphatics >C35-C44	<1000 µg/kg	TM414		21000	12900	2080	34500		
Total Aliphatics >C10-C44	<5000 µg/kg	TM414		76900	53000	14300	122000		
Total Aliphatics & Aromatics >C10-C44	<10000 µg/kg	TM414		148000	110000	100000	1120000		
Aromatics >EC5-EC7	<10 µg/kg	TM089		<10	<10	<10	<10		
Aromatics >EC7-EC8	<10 µg/kg	TM089		<10	<10	<10	<10		
Aromatics >EC8-EC10	<10 µg/kg	TM089		<10	<10	<10	<10		
Aromatics > EC10-EC12	<1000 µg/kg	TM414		<1000	<1000	<1000	3000		
Aromatics > EC12-EC16	<1000 µg/kg	TM414		<1000	<1000	<1000	16700		
Aromatics > EC16-EC21	<1000 µg/kg	TM414		15200	12900	12400	260000		
Aromatics > EC21-EC35	<1000 µg/kg	TM414		50100	39300	60000	628000		
Aromatics >EC35-EC44	<1000 µg/kg	TM414		4980	4940	12700	88600		
Aromatics > EC40-EC44	<1000 µg/kg	TM414		<1000	<1000	1460	16800		
Total Aromatics > EC10-EC44	<5000 µg/kg	TM414		71000	57400	86200	997000		
Total Aliphatics & Aromatics >C5-C44	<10000 µg/kg	TM414		148000	110000	100000	1120000		
Total Aliphatics >C5-C10	<50 µg/kg	TM089		<50	<50	<50	<50		
Total Aromatics >EC5-EC10	<50 µg/kg	TM089		<50	<50	<50	<50		
GRO >C5-C10	<20 µg/kg	TM089		<20	<20	<20	<20		

Validated

CERTIFICATE OF ANALYSIS

SDG:	210415-79	**Client Reference:**	P18-669	**Report Number:**	595125
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	595077

VOC MS (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	3CBB-1	3CBB-2	3CBB-3	3CBB-4	R108-1	R112-1
			Depth (m)	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	13/04/2021	13/04/2021	13/04/2021	13/04/2021	13/04/2021	13/04/2021
			Sample Time	.	.	.	.	.	.
			Date Received	15/04/2021	15/04/2021	15/04/2021	15/04/2021	15/04/2021	15/04/2021
			SDG Ref	210415-79	210415-79	210415-79	210415-79	210415-79	210415-79
			Lab Sample No.(s)	24079820	24079830	24079835	24079841	24079787	24079893
			AGS Reference						
Dibromofluoromethane**	%	TM116		105	108	104	104	106	107
Toluene-d8**	%	TM116		99.2	97	97.9	99.4	98.4	97.1
4-Bromofluorobenzene**	%	TM116		97	93.8	99.9	95.2	102	98.5
Methyl Tertiary Butyl Ether	<10 µg/kg	TM116		<200 M	<200 M	<200 M	<200 M	<200 M	<200 M
Benzene	<9 µg/kg	TM116		<180 M	<180 M	<180 M	<180 M	<180 M	<180 M
Toluene	<7 µg/kg	TM116		<140 M	<140 M	<140 M	<140 M	<140 M	<140 M
Ethylbenzene	<4 µg/kg	TM116		<80 M	<80 M	<80 M	<80 M	<80 M	<80 M
p/m-Xylene	<10 µg/kg	TM116		<200 #	<200 #	<200 #	<200 #	<200 #	<200 #
o-Xylene	<10 µg/kg	TM116		<200 M	<200 M	<200 M	<200 M	<200 M	<200 M
Naphthalene	<13 µg/kg	TM116		<260 M	<260 M	<260 M	<260 M	<260 M	<260 M
Sum of Detected Xylenes	<0.02 mg/kg	TM116		<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Sum of BTEX	<40 µg/kg	TM116		<800	<800	<800	<800	<800	<800

Validated

CERTIFICATE OF ANALYSIS

SDG:	210415-79	**Client Reference:**	P18-669	**Report Number:**	595125
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	595077

VOC MS (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	R112-2	R112-3	R113-1	R113-2	R138-1	R138-2
			Depth (m)	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	13/04/2021	13/04/2021	13/04/2021	13/04/2021	13/04/2021	13/04/2021
			Sample Time	.	.	.	.	.	.
			Date Received	15/04/2021	15/04/2021	15/04/2021	15/04/2021	15/04/2021	15/04/2021
			SDG Ref	210415-79	210415-79	210415-79	210415-79	210415-79	210415-79
			Lab Sample No.(s)	24079795	24079802	24079809	24079815	24079859	24079871
			AGS Reference						
Dibromofluoromethane**	%	TM116		104	104	117	105	106	100
Toluene-d8**	%	TM116		96.4	98.2	95.8	98	96.7	96
4-Bromofluorobenzene**	%	TM116		96.9	97	98.2	94.2	94.8	92.8
Methyl Tertiary Butyl Ether	<10 µg/kg	TM116		<200 M	<200 M	<200 M	<200 M	<200 M	<200 M
Benzene	<9 µg/kg	TM116		<180 M	<180 M	<180 M	<180 M	<180 M	<180 M
Toluene	<7 µg/kg	TM116		<140 M	<140 M	<140 M	<140 M	<140 M	<140 M
Ethylbenzene	<4 µg/kg	TM116		<80 M	<80 M	<80 M	<80 M	<80 M	<80 M
p/m-Xylene	<10 µg/kg	TM116		<200 #	<200 #	<200 #	<200 #	<200 #	<200 #
o-Xylene	<10 µg/kg	TM116		<200 M	<200 M	<200 M	<200 M	<200 M	<200 M
Naphthalene	<13 µg/kg	TM116		<260 M	<260 M	<260 M	<260 M	<260 M	<260 M
Sum of Detected Xylenes	<0.02 mg/kg	TM116		<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Sum of BTEX	<40 µg/kg	TM116		<800	<800	<800	<800	<800	<800

Validated

CERTIFICATE OF ANALYSIS

SDG:	210415-79	**Client Reference:**	P18-669	**Report Number:**	595125
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	595077

VOC MS (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	R138-3	R138-4	R139-1	W182-1		
			Depth (m)	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20		
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)		
			Date Sampled	13/04/2021	13/04/2021	13/04/2021	13/04/2021		
			Sample Time	.	.	.	.		
			Date Received	15/04/2021	15/04/2021	15/04/2021	15/04/2021		
			SDG Ref	210415-79	210415-79	210415-79	210415-79		
			Lab Sample No.(s)	24079875	24079881	24079888	24079846		
			AGS Reference						
Dibromofluoromethane**	%	TM116		106	103	115	107		
Toluene-d8**	%	TM116		99.3	99.4	97.5	97.8		
4-Bromofluorobenzene**	%	TM116		100	96.7	99.7	95.8		
Methyl Tertiary Butyl Ether	<10 µg/kg	TM116		<200 M	<200 M	<200 M	<200 M		
Benzene	<9 µg/kg	TM116		<180 M	<180 M	<180 M	<180 M		
Toluene	<7 µg/kg	TM116		<140 M	<140 M	<140 M	<140 M		
Ethylbenzene	<4 µg/kg	TM116		<80 M	<80 M	<80 M	<80 M		
p/m-Xylene	<10 µg/kg	TM116		<200 #	<200 #	<200 #	<200 #		
o-Xylene	<10 µg/kg	TM116		<200 M	<200 M	<200 M	<200 M		
Naphthalene	<13 µg/kg	TM116		<260 M	<260 M	<260 M	369 M		
Sum of Detected Xylenes	<0.02 mg/kg	TM116		<0.4	<0.4	<0.4	<0.4		
Sum of BTEX	<40 µg/kg	TM116		<800	<800	<800	<800		

CERTIFICATE OF ANALYSIS

SDG:	210415-79	**Client Reference:**	P18-669	**Report Number:**	595125
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	595077

Asbestos Identification - Solid Samples

Results Legend

#	ISO17025 accredited.
M	*m*CERTS accredited.
*	Subcontracted test.
(F)	Trigger breach confirmed
1-5&+$@	Sample deviation (see appendix)

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthophyllite	Fibrous Tremolite	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	3CBB-2 0.20 - 0.20 SOLID 13/04/2021 00:00:00 15/04/2021 05:00:00 210415-79 24079830 TM048	20/04/2021	Agnieszka Chelmowska	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	3CBB-4 0.20 - 0.20 SOLID 13/04/2021 00:00:00 15/04/2021 05:00:00 210415-79 24079841 TM048	20/04/2021	Agnieszka Chelmowska	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	R112-1 0.20 - 0.20 SOLID 13/04/2021 00:00:00 15/04/2021 05:00:00 210415-79 24079893 TM048	19/04/2021	James Richards	Fibre bundles in soil	Not Detected (#)	Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	R112-3 0.20 - 0.20 SOLID 13/04/2021 00:00:00 15/04/2021 05:00:00 210415-79 24079802 TM048	19/04/2021	Paul Poynton	Loose fibres in soil	Not Detected (#)	Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	R113-2 0.20 - 0.20 SOLID 13/04/2021 00:00:00 15/04/2021 05:00:00 210415-79 24079815 TM048	20/04/2021	Agnieszka Chelmowska	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	R138-1 0.20 - 0.20 SOLID 13/04/2021 00:00:00 15/04/2021 05:00:00 210415-79 24079859 TM048	20/04/2021	Agnieszka Chelmowska	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	R138-3 0.20 - 0.20 SOLID 13/04/2021 00:00:00 15/04/2021 05:00:00 210415-79 24079875 TM048	20/04/2021	Agnieszka Chelmowska	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	R139-1 0.20 - 0.20 SOLID 13/04/2021 00:00:00 15/04/2021 05:00:00 210415-79 24079888 TM048	19/04/2021	Paul Poynton	ACM fragment typical of asbestos cement and loose fibres in soil	Not Detected (#)	Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected

CERTIFICATE OF ANALYSIS

SDG:	210415-79	**Client Reference:**	P18-669	**Report Number:**	595125
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	595077

Asbestos Quantification - Full

Results Legend

#	ISO17025 accredited.
M	*m*CERTS accredited.
*	Subcontracted test.
(F)	Trigger breach confirmed
1-5&+$@	Sample deviation (see appendix)

		Additional Asbestos Components	Analysts Comments	Asbestos Quantification - Gravimetric - %	Asbestos Quantification - PCOM	Asbestos Quantification - Total - %
Cust. Sample Ref.	R112-1	None (#)	-	<0.001 (#)	<0.001 (#)	<0.001 (#)
Depth (m)	0.20 - 0.20					
Sample Type	SOLID					
Date Sampled	13/04/2021 00:00:00					
Date Received	15/04/2021 05:00:00					
SDG	210415-79					
Original Sample	24079893					
Method Number	TM304					
Cust. Sample Ref.	R112-3	None (#)	-	<0.001 (#)	<0.001 (#)	<0.001 (#)
Depth (m)	0.20 - 0.20					
Sample Type	SOLID					
Date Sampled	13/04/2021 00:00:00					
Date Received	15/04/2021 05:00:00					
SDG	210415-79					
Original Sample	24079802					
Method Number	TM304					
Cust. Sample Ref.	R139-1	None (#)	-	<0.001 (#)	<0.001 (#)	<0.001 (#)
Depth (m)	0.20 - 0.20					
Sample Type	SOLID					
Date Sampled	13/04/2021 00:00:00					
Date Received	15/04/2021 05:00:00					
SDG	210415-79					
Original Sample	24079888					
Method Number	TM304					

Table of Results - Appendix

Method No	Reference	Description
PM024	Modified BS 1377	Soil preparation including homogenisation, moisture screens of soils for Asbestos Containing Material
TM024	Method 4500A & B, AWWA/APHA, 20th Ed., 1999	Determination of Exchangeable Ammonium and Ammoniacal Nitrogen as N by titration on solids
TM048	HSG 248, Asbestos: The analysts' guide for sampling, analysis and clearance procedures	Identification of Asbestos in Bulk Material
TM062 (S)	National Grid Property Holdings Methods for the Collection & Analysis of Samples from National Grid Sites version 1 Sec 3.9	Determination of Phenols in Soils by HPLC
TM089	Modified: US EPA Methods 8020 & 602	Determination of Gasoline Range Hydrocarbons (GRO) by Headspace GC-FID (C4-C12)
TM116	Modified: US EPA Method 8260, 8120, 8020, 624, 610 & 602	Determination of Volatile Organic Compounds by Headspace / GC-MS
TM132	In - house Method	ELTRA CS800 Operators Guide
TM133	BS 1377: Part 3 1990;BS 6068-2.5	Determination of pH in Soil and Water using the GLpH pH Meter
TM153	Method 4500A,B,C, I, M AWWA/APHA, 20th Ed., 1999	Determination of Total Cyanide, Free (Easily Liberatable) Cyanide and Thiocyanate using the Skalar SANS+ System Segmented Flow Analyser
TM181	US EPA Method 6010B	Determination of Routine Metals in Soil by iCap 6500 Duo ICP-OES
TM218	Shaker extraction - EPA method 3546.	The determination of PAH in soil samples by GC-MS
TM304	HSE Contract research Report no 83/1996	Asbestos Quantification in Soil: Fibres identified by morphology only
TM414	Analysis of Petroleum Hydrocarbons in Environmental Media – Total Petroleum Hydrocarbon Criteria	Determination of Speciated Extractable Petroleum Hydrocarbons in Soils by GCxGC-FID

NA = not applicable.

Chemical testing (unless subcontracted) performed at ALS Life Sciences Ltd Hawarden (Method codes TM) or ALS Life Sciences Ltd Aberdeen (Method codes S).

CERTIFICATE OF ANALYSIS

SDG:	210415-79	**Client Reference:**	P18-669	**Report Number:**	595125
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	595077

Test Completion Dates

Lab Sample No(s)	24079820	24079830	24079835	24079841	24079787	24079893	24079795	24079802	24079809	24079815
Customer Sample Ref.	3CBB-1	3CBB-2	3CBB-3	3CBB-4	R108-1	R112-1	R112-2	R112-3	R113-1	R113-2
AGS Ref.										
Depth	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
Ammonium Soil by Titration	21-Apr-2021	21-Apr-2021	21-Apr-2021	21-Apr-2021	21-Apr-2021	21-Apr-2021	21-Apr-2021	21-Apr-2021	21-Apr-2021	21-Apr-2021
Asbestos ID in Solid Samples		20-Apr-2021		20-Apr-2021		19-Apr-2021		19-Apr-2021		20-Apr-2021
Asbestos Quantification - Full						22-Apr-2021		22-Apr-2021		
Cyanide Comp/Free/Total/Thiocyanate	19-Apr-2021	19-Apr-2021	19-Apr-2021	19-Apr-2021	19-Apr-2021	19-Apr-2021	19-Apr-2021	19-Apr-2021	19-Apr-2021	19-Apr-2021
EPH CWG GC (S)	19-Apr-2021	19-Apr-2021	19-Apr-2021	19-Apr-2021	19-Apr-2021	19-Apr-2021	19-Apr-2021	19-Apr-2021	19-Apr-2021	19-Apr-2021
GRO by GC-FID (S)	20-Apr-2021	20-Apr-2021	20-Apr-2021	20-Apr-2021	20-Apr-2021	20-Apr-2021	20-Apr-2021	20-Apr-2021	20-Apr-2021	20-Apr-2021
Metals in solid samples by OES	21-Apr-2021	22-Apr-2021	21-Apr-2021	21-Apr-2021	21-Apr-2021	21-Apr-2021	20-Apr-2021	21-Apr-2021	22-Apr-2021	21-Apr-2021
PAH by GCMS	16-Apr-2021	20-Apr-2021	20-Apr-2021	16-Apr-2021	20-Apr-2021	20-Apr-2021	20-Apr-2021	20-Apr-2021	20-Apr-2021	20-Apr-2021
pH	16-Apr-2021	16-Apr-2021	16-Apr-2021	16-Apr-2021	15-Apr-2021	15-Apr-2021	16-Apr-2021	15-Apr-2021	15-Apr-2021	16-Apr-2021
Phenols by HPLC (S)	20-Apr-2021	20-Apr-2021	19-Apr-2021	19-Apr-2021	19-Apr-2021	20-Apr-2021	20-Apr-2021	20-Apr-2021	19-Apr-2021	20-Apr-2021
Sample description	15-Apr-2021	15-Apr-2021	15-Apr-2021	15-Apr-2021	15-Apr-2021	15-Apr-2021	15-Apr-2021	15-Apr-2021	15-Apr-2021	15-Apr-2021
Total Organic Carbon	20-Apr-2021	20-Apr-2021	20-Apr-2021	22-Apr-2021	22-Apr-2021	22-Apr-2021	22-Apr-2021	22-Apr-2021	20-Apr-2021	20-Apr-2021
TPH CWG GC (S)	20-Apr-2021	20-Apr-2021	20-Apr-2021	20-Apr-2021	20-Apr-2021	20-Apr-2021	20-Apr-2021	20-Apr-2021	20-Apr-2021	20-Apr-2021
VOC MS (S)	16-Apr-2021	16-Apr-2021	16-Apr-2021	19-Apr-2021	16-Apr-2021	16-Apr-2021	20-Apr-2021	16-Apr-2021	16-Apr-2021	16-Apr-2021

Lab Sample No(s)	24079859	24079871	24079875	24079881	24079888	24079846
Customer Sample Ref.	R138-1	R138-2	R138-3	R138-4	R139-1	W182-1
AGS Ref.						
Depth	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
Ammonium Soil by Titration	21-Apr-2021	21-Apr-2021	21-Apr-2021	21-Apr-2021	21-Apr-2021	21-Apr-2021
Asbestos ID in Solid Samples	20-Apr-2021		20-Apr-2021		19-Apr-2021	
Asbestos Quantification - Full					22-Apr-2021	
Cyanide Comp/Free/Total/Thiocyanate	19-Apr-2021	19-Apr-2021	19-Apr-2021	19-Apr-2021	19-Apr-2021	19-Apr-2021
EPH CWG GC (S)	19-Apr-2021	19-Apr-2021	19-Apr-2021	19-Apr-2021	19-Apr-2021	19-Apr-2021
GRO by GC-FID (S)	19-Apr-2021	20-Apr-2021	20-Apr-2021	19-Apr-2021	19-Apr-2021	20-Apr-2021
Metals in solid samples by OES	22-Apr-2021	22-Apr-2021	22-Apr-2021	20-Apr-2021	21-Apr-2021	21-Apr-2021
PAH by GCMS	16-Apr-2021	16-Apr-2021	20-Apr-2021	20-Apr-2021	16-Apr-2021	16-Apr-2021
pH	16-Apr-2021	16-Apr-2021	16-Apr-2021	16-Apr-2021	16-Apr-2021	16-Apr-2021
Phenols by HPLC (S)	19-Apr-2021	19-Apr-2021	20-Apr-2021	20-Apr-2021	20-Apr-2021	19-Apr-2021
Sample description	15-Apr-2021	15-Apr-2021	15-Apr-2021	15-Apr-2021	15-Apr-2021	15-Apr-2021
Total Organic Carbon	20-Apr-2021	20-Apr-2021	20-Apr-2021	22-Apr-2021	20-Apr-2021	20-Apr-2021
TPH CWG GC (S)	19-Apr-2021	20-Apr-2021	20-Apr-2021	19-Apr-2021	19-Apr-2021	20-Apr-2021
VOC MS (S)	20-Apr-2021	20-Apr-2021	16-Apr-2021	19-Apr-2021	16-Apr-2021	20-Apr-2021

Appendix General

1. Results are expressed on a dry weight basis (dried at 35ºC) for all soil analyses except for the following: NRA and CEN Leach tests, flash point LOI, pH, ammonium as NH4 by the BRE method, VOC TICs and SVOC TICs.

2. If sufficient sample is received a sub sample will be retained free of charge for 30 days after analysis is completed (e-mailed) for all sample types unless the sample is destroyed on testing. The prepared soil sub sample that is analysed for asbestos will be retained for a period of 6 months after the analysis date. All bulk samples will be retained for a period of 6 months after the analysis date. All samples received and not scheduled will be disposed of one month after the date of receipt unless we are instructed to the contrary. Once the initial period has expired, a storage charge will be applied for each month or part thereof until the client cancels the request for sample storage. ALS reserve the right to charge for samples received and stored but not analysed.

3. With respect to turnaround, we will always endeavour to meet client requirements wherever possible, but turnaround times cannot be absolutely guaranteed due to so many variables beyond our control.

4. We take responsibility for any test performed by sub-contractors (marked with an asterisk). We endeavour to use UKAS/MCERTS Accredited Laboratories, who either complete a quality questionnaire or are audited by ourselves. For some determinands there are no UKAS/MCERTS Accredited Laboratories, in this instance a laboratory with a known track record will be utilised.

5. If no separate volatile sample is supplied by the client, or if a headspace or sediment is present in the volatile sample, the integrity of the data may be compromised. This will be flagged up as an invalid VOC on the test schedule and the result marked as deviating on the test certificate.

6. NDP - No determination possible due to insufficient/unsuitable sample.

7. Results relate only to the items tested.

8. LoDs (Limit of Detection) for wet tests reported on a dry weight basis are not corrected for moisture content.

9. **Surrogate recoveries** - Surrogates are added to your sample to monitor recovery of the test requested. A % recovery is reported, results are not corrected for the recovery measured. Typical recoveries for organics tests are 70-130%. Recoveries in soils are affected by organic rich or clay rich matrices. Waters can be affected by remediation fluids or high amounts of sediment. Test results are only ever reported if all of the associated quality checks pass; it is assumed that all recoveries outside of the values above are due to matrix affect.

10. Stones/debris are not routinely removed. We always endeavour to take a representative sub sample from the received sample.

11. In certain circumstances the method detection limit may be elevated due to the sample being outside the calibration range. Other factors that may contribute to this include possible interferences. In both cases the sample would be diluted which would cause the method detection limit to be raised.

12. Mercury results quoted on soils will not include volatile mercury as the analysis is performed on a dried and crushed sample.

13. For leachate preparations other than Zero Headspace Extraction (ZHE) volatile loss may occur.

14. For the BSEN 12457-3 two batch process to allow the cumulative release to be calculated, the volume of the leachate produced is measured and filtered for all tests. We therefore cannot carry out any unfiltered analysis. The tests affected include volatiles GCFID/GCMS and all subcontracted analysis.

15. Analysis and identification of specific compounds using GCFID is by retention time only, and we routinely calibrate and quantify for benzene, toluene, ethylbenzenes and xylenes (BTEX). For total volatiles in the C5-C12 range, the total area of the chromatogram is integrated and expressed as ug/kg or ug/l. Although this analysis is commonly used for the quantification of gasoline range organics (GRO), the system will also detect other compounds such as chlorinated solvents, and this may lead to a falsely high result with respect to hydrocarbons only. It is not possible to specifically identify these non-hydrocarbons, as standards are not routinely run for any other compounds, and for more definitive identification, volatiles by GCMS should be utilised.

16. We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample. Other coarse granular material such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

17. **Tentatively Identified Compounds (TICs)** are non-target peaks in VOC and SVOC analysis. All non-target peaks detected with a concentration above the LoD are subjected to a mass spectral library search. Non-target peaks with a library search confidence of >75% are reported based on the best mass spectral library match. When a non-target peak with a library search confidence of <75% is detected it is reported as “mixed hydrocarbons”. Non-target compounds identified from the scan data are semi-quantified relative to one of the deuterated internal standards, under the same chromatographic conditions as the target compounds. This result is reported as a semi-quantitative value and reported as Tentatively Identified Compounds (TICs). TICs are outside the scope of UKAS accreditation and are not moisture corrected.

18. **Sample Deviations**

If a sample is classed as deviated then the associated results may be compromised.

1	**Container with Headspace provided for volatiles analysis**
2	**Incorrect container received**
3	**Deviation from method**
4	**Matrix interference**
♦	**Sample holding time exceeded in laboratory**
@	**Sample holding time exceeded due to late arrival of instructions or samples**
§	**Sampled on date not provided**

19. **Asbestos**

When requested, the individual sub sample scheduled will be analysed in house for the presence of asbestos fibres and asbestos containing material by our documented in house method TM048 based on HSG 248 (2005), which is accredited to ISO17025. If a specific asbestos fibre type is not found this will be reported as “Not detected”. If no asbestos fibre types are found all will be reported as “Not detected” and the sub sample analysed deemed to be clear of asbestos. If an asbestos fibre type is found it will be reported as detected (for each fibre type found). Testing can be carried out on asbestos positive samples, but, due to Health and Safety considerations, may be replaced by alternative tests or reported as No Determination Possible (NDP). The quantity of asbestos present is not determined unless specifically requested.

Identification of Asbestos in Bulk Materials & Soils

The results for identification of asbestos in bulk materials are obtained from supplied bulk materials which have been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

The results for identification of asbestos in soils are obtained from a homogenised sub sample which has been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

Asbestos Type	Common Name
Chrysotile	White Asbestos
Amosite	Brown Asbestos
Crocidolite	Blue Asbestos
Fibrous Actinolite	-
Fibrous Anthophyllite	-
Fibrous Tremolite	-

Visual Estimation Of Fibre Content

Estimation of fibre content is not permitted as part of our UKAS accredited test other than: - Trace - Where only one or two asbestos fibres were identified.

Respirable Fibres

Respirable fibres are defined as fibres of <3 µm diameter, longer than 5 µm and with aspect ratios of at least 3:1 that can be inhaled into the lower regions of the lung and are generally acknowledged to be most important predictor of hazard and risk for cancers of the lung.
Standing Committee of Analysts, *The Quantification of Asbestos in Soil (2017).*

Further guidance on typical asbestos fibre content of manufactured products can be found in HSG 264.

The identification of asbestos containing materials and soils falls within our schedule of tests for which we hold UKAS accreditation, however opinions, interpretations and all other information contained in the report are outside the scope of UKAS accreditation.

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Website: www.alsenvironmental.co.uk

Atkins Global Ltd
Project Jonah site office
Llan Coed House
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Attention: John Fitzgerald

CERTIFICATE OF ANALYSIS

Date:	22 November 2017
Customer:	H_ATKINS_LDC
Sample Delivery Group (SDG):	171023-8
Your Reference:	
Location:	Llanwern
Report No:	433712

This report has been revised and directly supersedes 433704 in its entirety.

We received 13 samples on Monday October 23, 2017 and 13 of these samples were scheduled for analysis which was completed on Thursday November 16, 2017. Accredited laboratory tests are defined within the report, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation.

Should this report require incorporation into client reports, it must be used in its entirety and not simply with the data sections alone.

Chemical testing (unless subcontracted) performed at ALS Environmental Hawarden (Method codes TM) or ALS Environmental Aberdeen (Method codes S).

Approved By:

Sonia McWhan

Operations Manager

ALS Life Sciences Limited. Registered Office: Units 7 & 8 Hawarden Business Park, Manor Road, Hawarden, Deeside, CH5 3US. Registered in England and Wales No. 4057291.

CERTIFICATE OF ANALYSIS

SDG:	171023-8	**Client Reference:**		**Report Number:**	433712
Location:	Llanwern	**Order Number:**	LLA356	**Superseded Report:**	433704

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
16412455	SP2B-16		0.00 - 0.00	20/10/2017
16412491	SP2B-17		0.00 - 0.00	20/10/2017
16412495	SP2B-18		0.00 - 0.00	20/10/2017
16412500	SP2B-19		0.00 - 0.00	20/10/2017
16412504	SP2B-20		0.00 - 0.00	20/10/2017
16412510	SP2B-21		0.00 - 0.00	20/10/2017
16412515	SP2B-22		0.00 - 0.00	20/10/2017
16412520	SP2B-23		0.00 - 0.00	20/10/2017
16412524	SP2B-24		0.00 - 0.00	20/10/2017
16412472	SP2B-25		0.00 - 0.00	20/10/2017
16412479	SP2B-26		0.00 - 0.00	20/10/2017
16412483	SP2B-27		0.00 - 0.00	20/10/2017
16412487	SP2B-28		0.00 - 0.00	20/10/2017

Maximum Sample/Coolbox Temperature (°C) : **12.6**

ISO5667-3 Water quality - Sampling - Part3 -

During Transportation samples shall be stored in a cooling device capable of maintaining a temperature of (5±3)°C.

ALS have data which show that a cool box with 4 frozen icepacks is capable of maintaining pre-chilled samples at a temperature of (5±3)°C for a period of up to 24hrs.

Only received samples which have had analysis scheduled will be shown on the following pages.

Validated

CERTIFICATE OF ANALYSIS

SDG:	171023-8	**Client Reference:**		**Report Number:**	433712
Location:	Llanwern	**Order Number:**	LLA356	**Superseded Report:**	433704

Results Legend

X Test

N No Determination Possible

Sample Types -
S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

Lab Sample No(s)				16412455			16412491			16412495			16412500			16412504			16412510			16412515			16412520
Customer Sample Reference				SP2B-16			SP2B-17			SP2B-18			SP2B-19			SP2B-20			SP2B-21			SP2B-22			SP2B-23
AGS Reference																									
Depth (m)				0.00 - 0.00			0.00 - 0.00			0.00 - 0.00			0.00 - 0.00			0.00 - 0.00			0.00 - 0.00			0.00 - 0.00			0.00 - 0.00
Container				250g Amber Jar (ALE210)	400g Tub (ALE214)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)		250g Amber Jar (ALE210)	400g Tub (ALE214)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)		250g Amber Jar (ALE210)	400g Tub (ALE214)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)		250g Amber Jar (ALE210)	400g Tub (ALE214)	60g VOC (ALE215)	250g Amber Jar (ALE210)
Sample Type				S	S	S	S	S		S	S	S	S	S		S	S	S	S	S		S	S	S	S
Alkali Metals by iCap-OES (Soil)	All	NDPs: 0 Tests: 7		X						X						X						X			
Ammonium Soil by Titration	All	NDPs: 0 Tests: 13		X			X			X			X			X			X			X			X
Anions by Kone (soil)	All	NDPs: 0 Tests: 7		X						X						X						X			
Asbestos ID*	All	NDPs: 0 Tests: 7			X						X						X						X		
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 13		X			X			X			X			X			X			X			X
EPH CWG (Aliphatic) GC (S)	All	NDPs: 0 Tests: 13		X			X			X			X			X			X			X			X
EPH CWG (Aromatic) GC (S)	All	NDPs: 0 Tests: 13		X			X			X			X			X			X			X			X
GRO by GC-FID (S)	All	NDPs: 0 Tests: 13				X		X				X		X				X		X				X		
Metals in solid samples by OES	All	NDPs: 0 Tests: 13		X			X			X			X			X			X			X			X
PAH by GCMS	All	NDPs: 0 Tests: 13		X			X			X			X			X			X			X			X
pH	All	NDPs: 0 Tests: 13		X			X			X			X			X			X			X			X
Phenols by HPLC (S)	All	NDPs: 0 Tests: 13		X			X			X			X			X			X			X			X
Sample description	All	NDPs: 0 Tests: 13		X			X			X			X			X			X			X			X
Total Organic Carbon	All	NDPs: 0 Tests: 13		X			X			X			X			X			X			X			X
Total Sulphate	All	NDPs: 0 Tests: 7		X						X						X						X			

16412487	SP2B-28		0.00 - 0.00	60g VOC (ALE215)	S									X								
				400g Tub (ALE214)	S				X													
				250g Amber Jar (ALE210)	S	X	X	X		X	X	X		X	X	X	X	X	X	X	X
16412483	SP2B-27		0.00 - 0.00	60g VOC (ALE215)	S									X								
				250g Amber Jar (ALE210)	S		X			X	X	X		X	X	X	X	X	X		
16412479	SP2B-26		0.00 - 0.00	60g VOC (ALE215)	S									X								
				400g Tub (ALE214)	S				X													
				250g Amber Jar (ALE210)	S	X	X	X		X	X	X		X	X	X	X	X	X	X	X
16412472	SP2B-25		0.00 - 0.00	60g VOC (ALE215)	S									X								
				250g Amber Jar (ALE210)	S		X			X	X	X		X	X	X	X	X	X		
16412524	SP2B-24		0.00 - 0.00	60g VOC (ALE215)	S									X								
				400g Tub (ALE214)	S				X													
				250g Amber Jar (ALE210)	S	X	X	X		X	X	X		X	X	X	X	X	X	X	X
16412520	SP2B-23		0.00 - 0.00	60g VOC (ALE215)	S									X								

CERTIFICATE OF ANALYSIS

SDG:	171023-8	**Client Reference:**		**Report Number:**	433712
Location:	Llanwern	**Order Number:**	LLA356	**Superseded Report:**	433704

Results Legend

- X Test
- N No Determination Possible

Sample Types -
S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

Lab Sample No(s)			16412455			16412491		16412495			16412500		16412504			16412510		16412515			16412520
Customer Sample Reference			SP2B-16			SP2B-17		SP2B-18			SP2B-19		SP2B-20			SP2B-21		SP2B-22			SP2B-23
AGS Reference																					
Depth (m)			0.00 - 0.00			0.00 - 0.00		0.00 - 0.00			0.00 - 0.00		0.00 - 0.00			0.00 - 0.00		0.00 - 0.00			0.00 - 0.00
Container			250g Amber Jar (ALE210)	400g Tub (ALE214)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	400g Tub (ALE214)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	400g Tub (ALE214)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	400g Tub (ALE214)	60g VOC (ALE215)	250g Amber Jar (ALE210)
Sample Type			S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
Total Sulphur	All	NDPs: 0 Tests: 7	X					X					X					X			
TPH CWG GC (S)	All	NDPs: 0 Tests: 13	X			X		X			X		X			X		X			X

16:55:38 22/11/2017

16412487	SP2B-28		0.00 - 0.00	60g VOC (ALE215)	S						
				400g Tub (ALE214)	S						
				250g Amber Jar (ALE210)	S	X					
16412483	SP2B-27		0.00 - 0.00	60g VOC (ALE215)	S						
				250g Amber Jar (ALE210)	S	X					
16412479	SP2B-26		0.00 - 0.00	60g VOC (ALE215)	S						
				400g Tub (ALE214)	S						
				250g Amber Jar (ALE210)	S	X					
16412472	SP2B-25		0.00 - 0.00	60g VOC (ALE215)	S						
				250g Amber Jar (ALE210)	S	X					
16412524	SP2B-24		0.00 - 0.00	60g VOC (ALE215)	S						
				400g Tub (ALE214)	S						
				250g Amber Jar (ALE210)	S	X					
16412520	SP2B-23		0.00 - 0.00	60g VOC (ALE215)	S						

CERTIFICATE OF ANALYSIS

SDG:	171023-8	**Client Reference:**		**Report Number:**	433712
Location:	Llanwern	**Order Number:**	LLA356	**Superseded Report:**	433704

Sample Descriptions

Grain Sizes

very fine	<0.063mm	fine	0.063mm - 0.1mm	medium	0.1mm - 2mm	coarse	2mm - 10mm	very coarse	>10mm

Lab Sample No(s)	Customer Sample Ref.	Depth (m)	Colour	Description	Inclusions	Inclusions 2
16412455	SP2B-16	0.00 - 0.00	Black	Sandy Clay Loam	Stones	None
16412491	SP2B-17	0.00 - 0.00	Dark Brown	Sandy Clay Loam	Stones	N/A
16412495	SP2B-18	0.00 - 0.00	Dark Brown	Sandy Clay Loam	Stones	None
16412500	SP2B-19	0.00 - 0.00	Dark Brown	Sandy Clay Loam	Stones	Vegetation
16412504	SP2B-20	0.00 - 0.00	Dark Brown	Sandy Loam	Stones	Vegetation
16412510	SP2B-21	0.00 - 0.00	Dark Brown	Sandy Loam	Stones	Crushed Brick
16412515	SP2B-22	0.00 - 0.00	Dark Brown	Sandy Loam	Stones	Crushed Brick
16412520	SP2B-23	0.00 - 0.00	Dark Brown	Loamy Sand	Stones	Hardcore/Rubble
16412524	SP2B-24	0.00 - 0.00	Dark Brown	Loamy Sand	Stones	Crushed Brick
16412472	SP2B-25	0.00 - 0.00	Dark Brown	Sandy Loam	Stones	Crushed Brick
16412479	SP2B-26	0.00 - 0.00	Dark Brown	Loamy Sand	Stones	Crushed Brick
16412483	SP2B-27	0.00 - 0.00	Dark Brown	Sandy Clay	Vegetation	Crushed Brick
16412487	SP2B-28	0.00 - 0.00	Dark Brown	Loamy Sand	Stones	Crushed Brick

These descriptions are only intended to act as a cross check if sample identities are questioned, and to provide a log of sample matrices with respect to MCERTS validation. They are not intended as full geological descriptions.

We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally ocurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample.

Other coarse granular materials such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

Validated

CERTIFICATE OF ANALYSIS

SDG:	171023-8	**Client Reference:**		**Report Number:**	433712
Location:	Llanwern	**Order Number:**	LLA356	**Superseded Report:**	433704

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	SP2B-16	SP2B-17	SP2B-18	SP2B-19	SP2B-20	SP2B-21
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	20/10/2017	20/10/2017	20/10/2017	20/10/2017	20/10/2017	20/10/2017
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	23/10/2017	23/10/2017	23/10/2017	23/10/2017	23/10/2017	23/10/2017
			SDG Ref	171023-8	171023-8	171023-8	171023-8	171023-8	171023-8
			Lab Sample No.(s)	16412455	16412491	16412495	16412500	16412504	16412510
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		11	10	11	11	12	13
Actinolite*	-	SUB (ASB)		Not Detected #		Not Detected #		Not Detected #	
Amosite*	-	SUB (ASB)		Not Detected #		Not Detected #		Not Detected #	
Anthophyllite*	-	SUB (ASB)		Not Detected #		Not Detected #		Not Detected #	
Chrysotile*	-	SUB (ASB)		Detected #		Not Detected #		Not Detected #	
Crocidolite*	-	SUB (ASB)		Not Detected #		Not Detected #		Not Detected #	
Non-Asbestos Fibres*	-	SUB (ASB)		Not Detected #		Not Detected #		Not Detected #	
Tremolite*	-	SUB (ASB)		Not Detected #		Not Detected #		Not Detected #	
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	<12 M	<12 M	<12 M	<12 M	<12 M
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M
Sulphur, Total	<0.02 %	TM132		0.263		0.284		0.167	
Sulphate, Total potential	<0.06 %	TM132		0.789		0.852		0.501	
Soil Organic Matter (SOM)	<0.35 %	TM132		6.53 #	3.24 #	3.34 #	4.21 #	3.9 #	5.81 #
pH	1 pH Units	TM133		9.44 M	7.74 M	8.97 M	8.89 M	9.05 M	8.52 M
Cyanide, Total	<1 mg/kg	TM153		<1 M	<1 M	<1 M	<1 M	<1 M	<1 M
Arsenic	<0.6 mg/kg	TM181		<6 M	<6 M	6.23 M	112 M	10.6 M	7.96 M
Cadmium	<0.02 mg/kg	TM181		2.22 M	0.687 M	0.376 M	0.915 M	1.81 M	0.845 M
Chromium	<0.9 mg/kg	TM181		164 M	30.8 M	74.7 M	132 M	90 M	111 M
Copper	<1.4 mg/kg	TM181		24.3 M	<14 M	16.4 M	76.8 M	23.4 M	24.1 M
Iron	<1000 mg/kg	TM181		73500 #	76400 #	46400 #	121000 #	74200 #	67300 #
Lead	<0.7 mg/kg	TM181		122 M	41.3 M	51.7 M	50.7 M	125 M	76.5 M
Manganese	<0.13 mg/kg	TM181		11900 M	4390 M	7690 M	121000 M	6800 M	10300 M
Mercury	<0.14 mg/kg	TM181		<1.4 M	<1.4 M	<0.14 M	<1.4 M	<1.4 M	<1.4 M
Nickel	<0.2 mg/kg	TM181		18.9 M	17.3 M	16.3 M	119 M	28.2 M	23.9 M
Selenium	<1 mg/kg	TM181		<10 #	<10 #	4.49 #	64.1 #	<10 #	<10 #
Vanadium	<0.2 mg/kg	TM181		207 #	82 #	118 #	206 #	149 #	145 #
Zinc	<1.9 mg/kg	TM181		472 M	119 M	169 M	125 M	425 M	269 M
Sulphate, acid soluble (total)	<0.02 %	TM221		0.414		0.639		0.295	
Calcium	<21 mg/kg	TM224		131000		91700		96300	
Magnesium	<8 mg/kg	TM224		15800		14300		23100	

Validated

CERTIFICATE OF ANALYSIS

SDG:	171023-8	**Client Reference:**		**Report Number:**	433712
Location:	Llanwern	**Order Number:**	LLA356	**Superseded Report:**	433704

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	SP2B-16	SP2B-17	SP2B-18	SP2B-19	SP2B-20	SP2B-21
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	20/10/2017	20/10/2017	20/10/2017	20/10/2017	20/10/2017	20/10/2017
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	23/10/2017	23/10/2017	23/10/2017	23/10/2017	23/10/2017	23/10/2017
			SDG Ref	171023-8	171023-8	171023-8	171023-8	171023-8	171023-8
			Lab Sample No.(s)	16412455	16412491	16412495	16412500	16412504	16412510
			AGS Reference						
Soluble Sulphate 2:1 extract as SO4 BRE	<0.004 g/l	TM243		0.817 M		0.2 M		0.221 M	

Validated

CERTIFICATE OF ANALYSIS

SDG:	171023-8	**Client Reference:**		**Report Number:**	433712
Location:	Llanwern	**Order Number:**	LLA356	**Superseded Report:**	433704

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	SP2B-22	SP2B-23	SP2B-24	SP2B-25	SP2B-26	SP2B-27
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	20/10/2017	20/10/2017	20/10/2017	20/10/2017	20/10/2017	20/10/2017
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	23/10/2017	23/10/2017	23/10/2017	23/10/2017	23/10/2017	23/10/2017
			SDG Ref	171023-8	171023-8	171023-8	171023-8	171023-8	171023-8
			Lab Sample No.(s)	16412515	16412520	16412524	16412472	16412479	16412483
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		3.7	5.5	7.5	6.5	9.4	14
Actinolite*	-	SUB (ASB)		Not Detected #		Not Detected #		Not Detected #	
Amosite*	-	SUB (ASB)		Not Detected #		Not Detected #		Detected #	
Anthophyllite*	-	SUB (ASB)		Not Detected #		Not Detected #		Not Detected #	
Chrysotile*	-	SUB (ASB)		Not Detected #		Not Detected #		Not Detected #	
Crocidolite*	-	SUB (ASB)		Not Detected #		Not Detected #		Not Detected #	
Non-Asbestos Fibres*	-	SUB (ASB)		Not Detected #		Not Detected #		Not Detected #	
Tremolite*	-	SUB (ASB)		Not Detected #		Not Detected #		Not Detected #	
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	<12 M	<12 M	<12 M	<12 M	<12 M
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M
Sulphur, Total	<0.02 %	TM132		0.298		0.215		0.311	
Sulphate, Total potential	<0.06 %	TM132		0.894		0.645		0.933	
Soil Organic Matter (SOM)	<0.35 %	TM132		3.65 #	4.36 #	5.78 #	3.26 #	1.9 #	2.09 #
pH	1 pH Units	TM133		8.79 M	8.93 M	8.94 M	8.8 M	9.06 M	8.61 M
Cyanide, Total	<1 mg/kg	TM153		<1 M	<1 M	<1 M	<1 M	<1 M	<1 M
Arsenic	<0.6 mg/kg	TM181		<6 M	7.55 M	10.4 M	<6 M	<6 M	10.5 M
Cadmium	<0.02 mg/kg	TM181		0.916 M	0.162 M	1.13 M	1.31 M	0.288 M	0.258 M
Chromium	<0.9 mg/kg	TM181		43.8 M	53 M	34.7 M	162 M	287 M	15.4 M
Copper	<1.4 mg/kg	TM181		16.3 M	18.7 M	25.3 M	14.5 M	<14 M	9.76 M
Iron	<1000 mg/kg	TM181		62600 #	41500 #	63100 #	83900 #	94800 #	31300 #
Lead	<0.7 mg/kg	TM181		73 M	1190 M	94.8 M	62.9 M	30.6 M	41 M
Manganese	<0.13 mg/kg	TM181		6450 M	3590 M	2460 M	8360 M	14800 M	1150 M
Mercury	<0.14 mg/kg	TM181		<1.4 M	0.354 M	<1.4 M	<1.4 M	<1.4 M	0.526 M
Nickel	<0.2 mg/kg	TM181		19.7 M	20.9 M	29.3 M	24 M	9.41 M	23.8 M
Selenium	<1 mg/kg	TM181		<10 #	2.38 #	<10 #	<10 #	<10 #	<1 #
Vanadium	<0.2 mg/kg	TM181		94.9 #	98.9 #	64.6 #	148 #	255 #	40.3 #
Zinc	<1.9 mg/kg	TM181		237 M	146 M	282 M	246 M	88 M	179 M
Sulphate, acid soluble (total)	<0.02 %	TM221		0.372		0.157		0.399	
Calcium	<21 mg/kg	TM224		109000		76500		186000	
Magnesium	<8 mg/kg	TM224		14500		13000		31800	

Validated

CERTIFICATE OF ANALYSIS

SDG:	171023-8	**Client Reference:**		**Report Number:**	433712
Location:	Llanwern	**Order Number:**	LLA356	**Superseded Report:**	433704

Results Legend

#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Customer Sample Ref.			SP2B-22	SP2B-23	SP2B-24	SP2B-25	SP2B-26	SP2B-27
Depth (m)			0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
Sample Type			Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
Date Sampled			20/10/2017	20/10/2017	20/10/2017	20/10/2017	20/10/2017	20/10/2017
Sample Time			00:00	00:00	00:00	00:00	00:00	00:00
Date Received			23/10/2017	23/10/2017	23/10/2017	23/10/2017	23/10/2017	23/10/2017
SDG Ref			171023-8	171023-8	171023-8	171023-8	171023-8	171023-8
Lab Sample No.(s)			16412515	16412520	16412524	16412472	16412479	16412483
AGS Reference								
Component	**LOD/Units**	**Method**						
Soluble Sulphate 2:1 extract as SO4 BRE	<0.004 g/l	TM243	0.39 M		0.0957 M		0.164 M	

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CERTIFICATE OF ANALYSIS

SDG:	171023-8	**Client Reference:**		**Report Number:**	433712
Location:	Llanwern	**Order Number:**	LLA356	**Superseded Report:**	433704

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Customer Sample Ref.	SP2B-28
Depth (m)	0.00 - 0.00
Sample Type	Soil/Solid (S)
Date Sampled	20/10/2017
Sample Time	00:00
Date Received	23/10/2017
SDG Ref	171023-8
Lab Sample No.(s)	16412487
AGS Reference	

Component	LOD/Units	Method	
Moisture Content Ratio (% of as received sample)	%	PM024	11
Actinolite*	-	SUB (ASB)	Not Detected #
Amosite*	-	SUB (ASB)	Not Detected #
Anthophyllite*	-	SUB (ASB)	Not Detected #
Chrysotile*	-	SUB (ASB)	Not Detected #
Crocidolite*	-	SUB (ASB)	Not Detected #
Non-Asbestos Fibres*	-	SUB (ASB)	Not Detected #
Tremolite*	-	SUB (ASB)	Not Detected #
Exchangeable Ammonia as N	<12 mg/kg	TM024	<12 M
Phenol	<0.01 mg/kg	TM062 (S)	<0.01 M
Cresols	<0.01 mg/kg	TM062 (S)	0.0224 M
Xylenols	<0.015 mg/kg	TM062 (S)	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)	<0.035 M
Sulphur, Total	<0.02 %	TM132	0.167
Sulphate, Total potential	<0.06 %	TM132	0.501
Soil Organic Matter (SOM)	<0.35 %	TM132	4.14 #
pH	1 pH Units	TM133	8.78 M
Cyanide, Total	<1 mg/kg	TM153	<1 M
Arsenic	<0.6 mg/kg	TM181	<6 M
Cadmium	<0.02 mg/kg	TM181	0.525 M
Chromium	<0.9 mg/kg	TM181	277 M
Copper	<1.4 mg/kg	TM181	16.7 M
Iron	<1000 mg/kg	TM181	65200 #
Lead	<0.7 mg/kg	TM181	45.2 M
Manganese	<0.13 mg/kg	TM181	15200 M
Mercury	<0.14 mg/kg	TM181	2.12 M
Nickel	<0.2 mg/kg	TM181	14.2 M
Selenium	<1 mg/kg	TM181	<10 #
Vanadium	<0.2 mg/kg	TM181	202 #
Zinc	<1.9 mg/kg	TM181	121 M
Sulphate, acid soluble (total)	<0.02 %	TM221	0.348
Calcium	<21 mg/kg	TM224	149000
Magnesium	<8 mg/kg	TM224	23500

Validated

CERTIFICATE OF ANALYSIS

SDG:	171023-8	**Client Reference:**		**Report Number:**	433712
Location:	Llanwern	**Order Number:**	LLA356	**Superseded Report:**	433704

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Customer Sample Ref.	SP2B-28
Depth (m)	0.00 - 0.00
Sample Type	Soil/Solid (S)
Date Sampled	20/10/2017
Sample Time	00:00
Date Received	23/10/2017
SDG Ref	171023-8
Lab Sample No.(s)	16412487
AGS Reference	

Component	LOD/Units	Method	
Soluble Sulphate 2:1 extract as SO4 BRE	<0.004 g/l	TM243	0.604 M

Validated

CERTIFICATE OF ANALYSIS

SDG:	171023-8	**Client Reference:**		**Report Number:**	433712
Location:	Llanwern	**Order Number:**	LLA356	**Superseded Report:**	433704

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	SP2B-16	SP2B-17	SP2B-18	SP2B-19	SP2B-20	SP2B-21
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	20/10/2017	20/10/2017	20/10/2017	20/10/2017	20/10/2017	20/10/2017
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	23/10/2017	23/10/2017	23/10/2017	23/10/2017	23/10/2017	23/10/2017
			SDG Ref	171023-8	171023-8	171023-8	171023-8	171023-8	171023-8
			Lab Sample No.(s)	16412455	16412491	16412495	16412500	16412504	16412510
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		111	96.2	99.9	107	95	98.4
Acenaphthene-d10 % recovery**	%	TM218		116	92	99.9	102	91.7	98.2
Phenanthrene-d10 % recovery**	%	TM218		105	92.5	97.8	108	91.8	92.7
Chrysene-d12 % recovery**	%	TM218		104	90.7	106	103	94.2	88.9
Perylene-d12 % recovery**	%	TM218		124	96.1	110	123	97.6	110
Naphthalene	<0.009 mg/kg	TM218		10.6 M	0.39 M	1.21 M	0.584 M	1.08 M	0.486 M
Acenaphthylene	<0.012 mg/kg	TM218		1.53 M	0.106 M	0.189 M	0.136 M	0.183 M	0.131 M
Acenaphthene	<0.008 mg/kg	TM218		0.287 M	0.0327 M	0.113 M	<0.008 M	0.123 M	0.0269 M
Fluorene	<0.01 mg/kg	TM218		1.88 M	0.0778 M	0.233 M	0.106 M	0.242 M	0.0891 M
Phenanthrene	<0.015 mg/kg	TM218		12.1 M	0.689 M	1.95 M	1.1 M	1.9 M	0.745 M
Anthracene	<0.016 mg/kg	TM218		3.2 M	0.183 M	0.44 M	0.283 M	0.561 M	0.225 M
Fluoranthene	<0.017 mg/kg	TM218		16.4 M	1.25 M	3.21 M	2.1 M	3.37 M	1.49 M
Pyrene	<0.015 mg/kg	TM218		11.1 M	0.991 M	2.78 M	1.42 M	2.67 M	1.18 M
Benz(a)anthracene	<0.014 mg/kg	TM218		7.04 M	0.871 M	2.73 M	1.09 M	2.3 M	0.782 M
Chrysene	<0.01 mg/kg	TM218		5.65 M	0.804 M	2.85 M	0.957 M	2.15 M	0.695 M
Benzo(b)fluoranthene	<0.015 mg/kg	TM218		11.1 M	1.37 M	4 M	2.03 M	3.18 M	1.69 M
Benzo(k)fluoranthene	<0.014 mg/kg	TM218		4.33 M	0.516 M	1.81 M	0.621 M	1.4 M	0.637 M
Benzo(a)pyrene	<0.015 mg/kg	TM218		7.74 M	1.02 M	3.6 M	1.29 M	2.69 M	1.01 M
Indeno(1,2,3-cd)pyrene	<0.018 mg/kg	TM218		5.23 M	0.585 M	2.12 M	0.966 M	1.48 M	0.771 M
Dibenzo(a,h)anthracene	<0.023 mg/kg	TM218		1.66 M	0.177 M	0.669 M	0.292 M	0.45 M	0.231 M
Benzo(g,h,i)perylene	<0.024 mg/kg	TM218		5.52 M	0.665 M	2.46 M	1.12 M	1.72 M	0.891 M
PAH, Total Detected USEPA 16	<0.118 mg/kg	TM218		105	9.72	30.4	14.1	25.5	11.1

Validated

CERTIFICATE OF ANALYSIS

SDG:	171023-8	**Client Reference:**		**Report Number:**	433712
Location:	Llanwern	**Order Number:**	LLA356	**Superseded Report:**	433704

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	SP2B-22	SP2B-23	SP2B-24	SP2B-25	SP2B-26	SP2B-27
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	20/10/2017	20/10/2017	20/10/2017	20/10/2017	20/10/2017	20/10/2017
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	23/10/2017	23/10/2017	23/10/2017	23/10/2017	23/10/2017	23/10/2017
			SDG Ref	171023-8	171023-8	171023-8	171023-8	171023-8	171023-8
			Lab Sample No.(s)	16412515	16412520	16412524	16412472	16412479	16412483
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		108	91.3	97.3	89.8	104	96.2
Acenaphthene-d10 % recovery**	%	TM218		99.9	90.9	96	86	104	93
Phenanthrene-d10 % recovery**	%	TM218		105	90.2	95.8	83.9	103	88.9
Chrysene-d12 % recovery**	%	TM218		97	95	100	88.3	111	84.8
Perylene-d12 % recovery**	%	TM218		118	108	114	100	114	90.2
Naphthalene	<0.009 mg/kg	TM218		0.771 M	0.418 M	0.31 M	0.25 M	1.54 M	0.0318 M
Acenaphthylene	<0.012 mg/kg	TM218		0.349 M	0.0865 M	0.101 M	0.0723 M	1.26 M	<0.012 M
Acenaphthene	<0.008 mg/kg	TM218		0.0495 M	0.0151 M	0.0225 M	0.019 M	0.127 M	<0.008 M
Fluorene	<0.01 mg/kg	TM218		0.4 M	0.0545 M	0.0691 M	0.057 M	1.46 M	<0.01 M
Phenanthrene	<0.015 mg/kg	TM218		2.86 M	0.673 M	0.535 M	0.429 M	8.29 M	0.0442 M
Anthracene	<0.016 mg/kg	TM218		0.877 M	0.165 M	0.164 M	0.127 M	1.8 M	<0.016 M
Fluoranthene	<0.017 mg/kg	TM218		4.73 M	0.818 M	1.08 M	0.72 M	10.9 M	0.0712 M
Pyrene	<0.015 mg/kg	TM218		3.16 M	0.577 M	0.829 M	0.57 M	7.38 M	0.0484 M
Benz(a)anthracene	<0.014 mg/kg	TM218		2.29 M	0.49 M	0.89 M	0.527 M	4.51 M	0.0566 M
Chrysene	<0.01 mg/kg	TM218		1.94 M	0.365 M	0.716 M	0.399 M	3.43 M	0.0374 M
Benzo(b)fluoranthene	<0.015 mg/kg	TM218		4.04 M	0.58 M	1.25 M	0.677 M	4.78 M	0.0793 M
Benzo(k)fluoranthene	<0.014 mg/kg	TM218		1.66 M	0.258 M	0.452 M	0.292 M	2.25 M	0.0263 M
Benzo(a)pyrene	<0.015 mg/kg	TM218		2.57 M	0.45 M	0.965 M	0.563 M	4.06 M	0.0504 M
Indeno(1,2,3-cd)pyrene	<0.018 mg/kg	TM218		1.75 M	0.266 M	0.609 M	0.344 M	2.23 M	0.0348 M
Dibenzo(a,h)anthracene	<0.023 mg/kg	TM218		0.517 M	0.0886 M	0.171 M	0.101 M	0.698 M	<0.023 M
Benzo(g,h,i)perylene	<0.024 mg/kg	TM218		1.95 M	0.311 M	0.698 M	0.391 M	2.44 M	0.041 M
PAH, Total Detected USEPA 16	<0.118 mg/kg	TM218		29.9	5.62	8.86	5.54	57.1	0.522

Validated

CERTIFICATE OF ANALYSIS

SDG:	171023-8	**Client Reference:**		**Report Number:**	433712
Location:	Llanwern	**Order Number:**	LLA356	**Superseded Report:**	433704

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	SP2B-28
			Depth (m)	0.00 - 0.00
			Sample Type	Soil/Solid (S)
			Date Sampled	20/10/2017
			Sample Time	00:00
			Date Received	23/10/2017
			SDG Ref	171023-8
			Lab Sample No.(s)	16412487
			AGS Reference	
Naphthalene-d8 % recovery**	%	TM218		98.2
Acenaphthene-d10 % recovery**	%	TM218		98
Phenanthrene-d10 % recovery**	%	TM218		98
Chrysene-d12 % recovery**	%	TM218		107
Perylene-d12 % recovery**	%	TM218		122
Naphthalene	<0.009 mg/kg	TM218		3.43 M
Acenaphthylene	<0.012 mg/kg	TM218		0.594 M
Acenaphthene	<0.008 mg/kg	TM218		0.157 M
Fluorene	<0.01 mg/kg	TM218		0.818 M
Phenanthrene	<0.015 mg/kg	TM218		4.34 M
Anthracene	<0.016 mg/kg	TM218		1.04 M
Fluoranthene	<0.017 mg/kg	TM218		5.82 M
Pyrene	<0.015 mg/kg	TM218		4.21 M
Benz(a)anthracene	<0.014 mg/kg	TM218		3.9 M
Chrysene	<0.01 mg/kg	TM218		3 M
Benzo(b)fluoranthene	<0.015 mg/kg	TM218		4.75 M
Benzo(k)fluoranthene	<0.014 mg/kg	TM218		1.84 M
Benzo(a)pyrene	<0.015 mg/kg	TM218		4.18 M
Indeno(1,2,3-cd)pyrene	<0.018 mg/kg	TM218		2.17 M
Dibenzo(a,h)anthracene	<0.023 mg/kg	TM218		0.675 M
Benzo(g,h,i)perylene	<0.024 mg/kg	TM218		2.33 M
PAH, Total Detected USEPA 16	<0.118 mg/kg	TM218		43.3

Validated

CERTIFICATE OF ANALYSIS

SDG:	171023-8	**Client Reference:**		**Report Number:**	433712
Location:	Llanwern	**Order Number:**	LLA356	**Superseded Report:**	433704

TPH CWG (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	SP2B-16	SP2B-17	SP2B-18	SP2B-19	SP2B-20	SP2B-21
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	20/10/2017	20/10/2017	20/10/2017	20/10/2017	20/10/2017	20/10/2017
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	23/10/2017	23/10/2017	23/10/2017	23/10/2017	23/10/2017	23/10/2017
			SDG Ref	171023-8	171023-8	171023-8	171023-8	171023-8	171023-8
			Lab Sample No.(s)	16412455	16412491	16412495	16412500	16412504	16412510
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		21	71	84	73	73	102
GRO TOT (Moisture Corrected)	<0.044 mg/kg	TM089		<0.176 M	<0.176 M	<0.176 M	<0.176 M	<0.176 M	<0.176 M
Methyl tertiary butyl ether (MTBE)	<0.005 mg/kg	TM089		<0.02 #	<0.02 #	<0.02 #	<0.02 #	<0.02 #	<0.02 #
Benzene	<0.01 mg/kg	TM089		<0.04 M	<0.04 M	<0.04 M	<0.04 M	<0.04 M	<0.04 M
Toluene	<0.002 mg/kg	TM089		0.0235 M	0.0246 M	0.028 M	0.00896 M	0.0342 M	0.0217 M
Ethylbenzene	<0.003 mg/kg	TM089		<0.012 M	<0.012 M	<0.012 M	<0.012 M	<0.012 M	<0.012 M
m,p-Xylene	<0.006 mg/kg	TM089		<0.024 M	<0.024 M	<0.024 M	<0.024 M	<0.024 M	<0.024 M
o-Xylene	<0.003 mg/kg	TM089		<0.012 M	<0.012 M	<0.012 M	<0.012 M	<0.012 M	<0.012 M
sum of detected mpo xylene by GC	<0.009 mg/kg	TM089		<0.009	<0.009	<0.009	<0.009	<0.009	<0.009
sum of detected BTEX by GC	<0.024 mg/kg	TM089		<0.024	0.0246	0.028	<0.024	0.0342	<0.024
Aliphatics >C5-C6	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Aliphatics >C6-C8	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Aliphatics >C8-C10	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Aliphatics >C10-C12	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Aliphatics >C12-C16	<0.1 mg/kg	TM173		4.36	0.952	0.264	0.939	0.194	0.669
Aliphatics >C16-C21	<0.1 mg/kg	TM173		21	3.69	1.76	5.29	2.56	3.22
Aliphatics >C21-C35	<0.1 mg/kg	TM173		57.7	26.3	16.4	42.5	22.1	15.7
Aliphatics >C35-C44	<0.1 mg/kg	TM173		13.4	7.75	5.79	33.6	7.97	5.93
Total Aliphatics >C12-C44	<0.1 mg/kg	TM173		96.5	38.7	24.2	82.3	32.9	25.5
Aromatics >EC5-EC7	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Aromatics >EC7-EC8	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Aromatics >EC8-EC10	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Aromatics >EC10-EC12	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Aromatics >EC12-EC16	<0.1 mg/kg	TM173		11.5	1.46	2.4	1.9	2.22	2.22
Aromatics >EC16-EC21	<0.1 mg/kg	TM173		59.2	10.3	13.7	9.96	13.4	8.01
Aromatics >EC21-EC35	<0.1 mg/kg	TM173		162	59.8	72.4	56.7	69.3	33.1
Aromatics >EC35-EC44	<0.1 mg/kg	TM173		53.2	29.1	35.5	62.7	30.7	15.5
Aromatics >EC40-EC44	<0.1 mg/kg	TM173		18.5	11.2	13.9	30.1	11.4	4.17
Total Aromatics >EC12-EC44	<0.1 mg/kg	TM173		286	101	124	131	116	58.8
Total Aliphatics & Aromatics >C5-C44	<0.1 mg/kg	TM173		383	139	148	214	148	84.3

Validated

CERTIFICATE OF ANALYSIS

SDG:	171023-8	**Client Reference:**		**Report Number:**	433712
Location:	Llanwern	**Order Number:**	LLA356	**Superseded Report:**	433704

TPH CWG (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	SP2B-22	SP2B-23	SP2B-24	SP2B-25	SP2B-26	SP2B-27
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	20/10/2017	20/10/2017	20/10/2017	20/10/2017	20/10/2017	20/10/2017
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	23/10/2017	23/10/2017	23/10/2017	23/10/2017	23/10/2017	23/10/2017
			SDG Ref	171023-8	171023-8	171023-8	171023-8	171023-8	171023-8
			Lab Sample No.(s)	16412515	16412520	16412524	16412472	16412479	16412483
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		93	82	88	105	66	82
GRO TOT (Moisture Corrected)	<0.044 mg/kg	TM089		<0.176 M	<0.176 M	<0.176 M	<0.176 M	<0.176 M	<0.176 M
Methyl tertiary butyl ether (MTBE)	<0.005 mg/kg	TM089		<0.02 #	<0.02 #	<0.02 #	<0.02 #	<0.02 #	<0.02 #
Benzene	<0.01 mg/kg	TM089		<0.04 M	<0.04 M	<0.04 M	<0.04 M	<0.04 M	<0.04 M
Toluene	<0.002 mg/kg	TM089		0.0727 M	<0.008 M	0.0119 M	0.0375 M	0.0352 M	0.0522 M
Ethylbenzene	<0.003 mg/kg	TM089		<0.012 M	<0.012 M	<0.012 M	<0.012 M	<0.012 M	<0.012 M
m,p-Xylene	<0.006 mg/kg	TM089		<0.024 M	<0.024 M	<0.024 M	<0.024 M	<0.024 M	<0.024 M
o-Xylene	<0.003 mg/kg	TM089		<0.012 M	<0.012 M	<0.012 M	<0.012 M	<0.012 M	<0.012 M
sum of detected mpo xylene by GC	<0.009 mg/kg	TM089		<0.009	<0.009	<0.009	<0.009	<0.009	<0.009
sum of detected BTEX by GC	<0.024 mg/kg	TM089		0.0727	<0.024	<0.024	0.0375	0.0352	0.0522
Aliphatics >C5-C6	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Aliphatics >C6-C8	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Aliphatics >C8-C10	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Aliphatics >C10-C12	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Aliphatics >C12-C16	<0.1 mg/kg	TM173		0.616	1.34	0.442	1.9	1.76	0.517
Aliphatics >C16-C21	<0.1 mg/kg	TM173		3.07	4.64	2.85	3.68	6.84	1.42
Aliphatics >C21-C35	<0.1 mg/kg	TM173		16.6	25.6	20.2	22.7	33	11.2
Aliphatics >C35-C44	<0.1 mg/kg	TM173		5.44	5.99	3.36	5.83	10.3	2.12
Total Aliphatics >C12-C44	<0.1 mg/kg	TM173		25.7	37.6	26.9	34.1	51.9	15.3
Aromatics >EC5-EC7	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Aromatics >EC7-EC8	<0.01 mg/kg	TM089		0.0727	<0.04	<0.04	<0.04	<0.04	0.0522
Aromatics >EC8-EC10	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Aromatics >EC10-EC12	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Aromatics >EC12-EC16	<0.1 mg/kg	TM173		2.86	3.27	2.67	2.85	2.38	2.87
Aromatics >EC16-EC21	<0.1 mg/kg	TM173		12.8	8.1	9.55	7.5	10.4	8.14
Aromatics >EC21-EC35	<0.1 mg/kg	TM173		45.5	30.4	53.3	38	44.8	36.7
Aromatics >EC35-EC44	<0.1 mg/kg	TM173		17.6	12.3	20.9	17	28.1	18.2
Aromatics >EC40-EC44	<0.1 mg/kg	TM173		5.42	3.29	6.12	4.98	11.7	8.43
Total Aromatics >EC12-EC44	<0.1 mg/kg	TM173		78.7	54.1	86.4	65.3	85.7	65.9
Total Aliphatics & Aromatics >C5-C44	<0.1 mg/kg	TM173		105	91.7	113	99.5	138	81.2

CERTIFICATE OF ANALYSIS

SDG:	171023-8	**Client Reference:**		**Report Number:**	433712
Location:	Llanwern	**Order Number:**	LLA356	**Superseded Report:**	433704

TPH CWG (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	SP2B-28
			Depth (m)	0.00 - 0.00
			Sample Type	Soil/Solid (S)
			Date Sampled	20/10/2017
			Sample Time	00:00
			Date Received	23/10/2017
			SDG Ref	171023-8
			Lab Sample No.(s)	16412487
			AGS Reference	
GRO Surrogate % recovery**	%	TM089		48
GRO TOT (Moisture Corrected)	<0.044 mg/kg	TM089		<0.176 M
Methyl tertiary butyl ether (MTBE)	<0.005 mg/kg	TM089		<0.02 #
Benzene	<0.01 mg/kg	TM089		<0.04 M
Toluene	<0.002 mg/kg	TM089		0.0202 M
Ethylbenzene	<0.003 mg/kg	TM089		<0.012 M
m,p-Xylene	<0.006 mg/kg	TM089		<0.024 M
o-Xylene	<0.003 mg/kg	TM089		<0.012 M
sum of detected mpo xylene by GC	<0.009 mg/kg	TM089		<0.009
sum of detected BTEX by GC	<0.024 mg/kg	TM089		<0.024
Aliphatics >C5-C6	<0.01 mg/kg	TM089		<0.04
Aliphatics >C6-C8	<0.01 mg/kg	TM089		<0.04
Aliphatics >C8-C10	<0.01 mg/kg	TM089		<0.04
Aliphatics >C10-C12	<0.01 mg/kg	TM089		<0.04
Aliphatics >C12-C16	<0.1 mg/kg	TM173		1.44
Aliphatics >C16-C21	<0.1 mg/kg	TM173		3.87
Aliphatics >C21-C35	<0.1 mg/kg	TM173		15.7
Aliphatics >C35-C44	<0.1 mg/kg	TM173		3.89
Total Aliphatics >C12-C44	<0.1 mg/kg	TM173		24.9
Aromatics >EC5-EC7	<0.01 mg/kg	TM089		<0.04
Aromatics >EC7-EC8	<0.01 mg/kg	TM089		<0.04
Aromatics >EC8-EC10	<0.01 mg/kg	TM089		<0.04
Aromatics >EC10-EC12	<0.01 mg/kg	TM089		<0.04
Aromatics >EC12-EC16	<0.1 mg/kg	TM173		5.77
Aromatics >EC16-EC21	<0.1 mg/kg	TM173		22.3
Aromatics >EC21-EC35	<0.1 mg/kg	TM173		83.9
Aromatics >EC35-EC44	<0.1 mg/kg	TM173		33.2
Aromatics >EC40-EC44	<0.1 mg/kg	TM173		11.1
Total Aromatics >EC12-EC44	<0.1 mg/kg	TM173		145
Total Aliphatics & Aromatics >C5-C44	<0.1 mg/kg	TM173		170

CERTIFICATE OF ANALYSIS

SDG:	171023-8	**Client Reference:**		**Report Number:**	433712
Location:	Llanwern	**Order Number:**	LLA356	**Superseded Report:**	433704

Table of Results - Appendix

Method No	Reference	Description	Wet/Dry Sample [1]	Surrogate Corrected
ASB_PREP				
PM001		Preparation of Samples for Metals Analysis		
PM024	Modified BS 1377	Soil preparation including homogenisation, moisture screens of soils for Asbestos Containing Material		
SUB (ASB)				
TM024	Method 4500A & B, AWWA/APHA, 20th Ed., 1999	Determination of Exchangeable Ammonium and Ammoniacal Nitrogen as N by titration on solids		
TM062 (S)	National Grid Property Holdings Methods for the Collection & Analysis of Samples from National Grid Sites version 1 Sec 3.9	Determination of Phenols in Soils by HPLC		
TM089	Modified: US EPA Methods 8020 & 602	Determination of Gasoline Range Hydrocarbons (GRO) and BTEX (MTBE) compounds by Headspace GC-FID (C4-C12)		
TM132	In - house Method	ELTRA CS800 Operators Guide		
TM133	BS 1377: Part 3 1990;BS 6068-2.5	Determination of pH in Soil and Water using the GLpH pH Meter		
TM153	Method 4500A,B,C, I, M AWWA/APHA, 20th Ed., 1999	Determination of Total Cyanide, Free (Easily Liberatable) Cyanide and Thiocyanate using the Skalar SANS+ System Segmented Flow Analyser		
TM173	Analysis of Petroleum Hydrocarbons in Environmental Media – Total Petroleum Hydrocarbon Criteria	Determination of Speciated Extractable Petroleum Hydrocarbons in Soils by GC-FID		
TM181	US EPA Method 6010B	Determination of Routine Metals in Soil by iCap 6500 Duo ICP-OES		
TM218	Determination of PAH by GCMS Microwave extraction	The determination of PAH in soil samples by microwave extraction and GC-MS		
TM221	Inductively Coupled Plasma - Atomic Emission Spectroscopy. An Atlas of Spectral Information: Winge, Fassel, Peterson and Floyd	Determination of Acid extractable Sulphate in Soils by IRIS Emission Spectrometer		
TM224	US EPA Method 6010B	Determination of Alkaline Metals by iCap 6500 Duo ICP-OES		
TM243		Mixed Anions In Soils By Kone		

[1] Applies to Solid samples only. DRY indicates samples have been dried at 35°C. NA = not applicable.

Chemical testing (unless subcontracted) performed at ALS Environmental Hawarden (Method codes TM) or ALS Environmental Aberdeen (Method codes S).

CERTIFICATE OF ANALYSIS

SDG:	171023-8	**Client Reference:**		**Report Number:**	433712
Location:	Llanwern	**Order Number:**	LLA356	**Superseded Report:**	433704

Test Completion Dates

Lab Sample No(s)	16412455	16412491	16412495	16412500	16412504	16412510	16412515	16412520	16412524	16412472
Customer Sample Ref.	SP2B-16	SP2B-17	SP2B-18	SP2B-19	SP2B-20	SP2B-21	SP2B-22	SP2B-23	SP2B-24	SP2B-25
AGS Ref.										
Depth	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
Alkali Metals by iCap-OES (Soil)	01-Nov-2017		01-Nov-2017		02-Nov-2017		02-Nov-2017		01-Nov-2017	
Ammonium Soil by Titration	02-Nov-2017	02-Nov-2017	02-Nov-2017	02-Nov-2017	02-Nov-2017	02-Nov-2017	02-Nov-2017	02-Nov-2017	02-Nov-2017	02-Nov-2017
Anions by Kone (soil)	01-Nov-2017		01-Nov-2017		01-Nov-2017		01-Nov-2017		01-Nov-2017	
Asbestos ID*	16-Nov-2017		16-Nov-2017		16-Nov-2017		16-Nov-2017		16-Nov-2017	
Cyanide Comp/Free/Total/Thiocyanate	02-Nov-2017	02-Nov-2017	02-Nov-2017	02-Nov-2017	02-Nov-2017	02-Nov-2017	02-Nov-2017	02-Nov-2017	02-Nov-2017	02-Nov-2017
EPH CWG (Aliphatic) GC (S)	01-Nov-2017	01-Nov-2017	01-Nov-2017	01-Nov-2017	01-Nov-2017	02-Nov-2017	02-Nov-2017	02-Nov-2017	02-Nov-2017	02-Nov-2017
EPH CWG (Aromatic) GC (S)	01-Nov-2017	01-Nov-2017	01-Nov-2017	01-Nov-2017	01-Nov-2017	02-Nov-2017	02-Nov-2017	02-Nov-2017	02-Nov-2017	02-Nov-2017
GRO by GC-FID (S)	01-Nov-2017	01-Nov-2017	01-Nov-2017	01-Nov-2017	01-Nov-2017	01-Nov-2017	01-Nov-2017	01-Nov-2017	01-Nov-2017	01-Nov-2017
Metals in solid samples by OES	02-Nov-2017	02-Nov-2017	02-Nov-2017	03-Nov-2017	02-Nov-2017	02-Nov-2017	02-Nov-2017	01-Nov-2017	01-Nov-2017	02-Nov-2017
PAH by GCMS	01-Nov-2017	31-Oct-2017	31-Oct-2017	01-Nov-2017	31-Oct-2017	01-Nov-2017	01-Nov-2017	01-Nov-2017	01-Nov-2017	01-Nov-2017
pH	31-Oct-2017	31-Oct-2017	31-Oct-2017	31-Oct-2017	31-Oct-2017	31-Oct-2017	31-Oct-2017	31-Oct-2017	31-Oct-2017	31-Oct-2017
Phenols by HPLC (S)	03-Nov-2017	03-Nov-2017	03-Nov-2017	03-Nov-2017	01-Nov-2017	01-Nov-2017	03-Nov-2017	01-Nov-2017	01-Nov-2017	01-Nov-2017
Sample description	28-Oct-2017	28-Oct-2017	28-Oct-2017	28-Oct-2017	28-Oct-2017	28-Oct-2017	28-Oct-2017	28-Oct-2017	28-Oct-2017	28-Oct-2017
Total Organic Carbon	06-Nov-2017	06-Nov-2017	02-Nov-2017	06-Nov-2017	02-Nov-2017	02-Nov-2017	02-Nov-2017	06-Nov-2017	06-Nov-2017	06-Nov-2017
Total Sulphate	01-Nov-2017		01-Nov-2017		01-Nov-2017		01-Nov-2017		01-Nov-2017	
Total Sulphur	31-Oct-2017		31-Oct-2017		31-Oct-2017		31-Oct-2017		31-Oct-2017	
TPH CWG GC (S)	01-Nov-2017	01-Nov-2017	01-Nov-2017	01-Nov-2017	01-Nov-2017	02-Nov-2017	02-Nov-2017	02-Nov-2017	02-Nov-2017	02-Nov-2017

Lab Sample No(s)	16412479	16412483	16412487
Customer Sample Ref.	SP2B-26	SP2B-27	SP2B-28
AGS Ref.			
Depth	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
Alkali Metals by iCap-OES (Soil)	01-Nov-2017		01-Nov-2017
Ammonium Soil by Titration	02-Nov-2017	02-Nov-2017	02-Nov-2017
Anions by Kone (soil)	01-Nov-2017		01-Nov-2017
Asbestos ID*	16-Nov-2017		16-Nov-2017
Cyanide Comp/Free/Total/Thiocyanate	02-Nov-2017	02-Nov-2017	02-Nov-2017
EPH CWG (Aliphatic) GC (S)	02-Nov-2017	02-Nov-2017	02-Nov-2017
EPH CWG (Aromatic) GC (S)	02-Nov-2017	02-Nov-2017	02-Nov-2017
GRO by GC-FID (S)	01-Nov-2017	01-Nov-2017	01-Nov-2017
Metals in solid samples by OES	02-Nov-2017	01-Nov-2017	02-Nov-2017
PAH by GCMS	31-Oct-2017	01-Nov-2017	01-Nov-2017
pH	31-Oct-2017	31-Oct-2017	31-Oct-2017
Phenols by HPLC (S)	01-Nov-2017	01-Nov-2017	01-Nov-2017
Sample description	28-Oct-2017	28-Oct-2017	28-Oct-2017
Total Organic Carbon	06-Nov-2017	06-Nov-2017	02-Nov-2017
Total Sulphate	31-Oct-2017		01-Nov-2017
Total Sulphur	31-Oct-2017		31-Oct-2017
TPH CWG GC (S)	02-Nov-2017	02-Nov-2017	02-Nov-2017

ALS Environmental Ltd
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CV4 9GU

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www.alsenvironmental.co.uk

Ms Foster
ALS Life Sciences Limited
Units 7 & 8 Hawarden Business Park
Manor Road
Hawarden
Deeside CH5 3US

16 November 2017

Test Report: COV/1464009/2017

Dear Ms Foster

Analysis of your sample(s) submitted on 10 November 2017 is now complete and we have pleasure in enclosing the appropriate test report(s).

An invoice for the analysis carried out will be sent under separate cover.

Should you have any queries regarding this report(s) or any part of our service, please contact Customer Services on +44 (0)24 7642 1213 who will be happy to discuss your requirements.

If you would like to arrange any further analysis, please contact Customer Services. To arrange container delivery or sample collection, please call the Couriers Department directly on 024 7685 6562.

Thank you for using ALS Environmental Ltd and we look forward to receiving your next samples.

Yours Sincerely,

Signed:

Name: P. Patel

Title: Inorganic Team Leader

1314
Certificate No. GB97/10269
Environmental Management Systems
OHS 542058
This communication has been sent to you by ALS Environmental Ltd. Registered in England and Wales. Registration No.02148934. Registered Office: ALS Environmental Limited, Torrington Avenue, Coventry, CV4 9GU.

Report Summary

ANALYSED BY

Ms Carrie Foster
ALS Life Sciences Limited
Units 7 & 8 Hawarden Business Park
Manor Road
Hawarden
Deeside
CH5 3US

UKAS TESTING
1314
0897
4409

Date of Issue: **16 November 2017**

Report Number: **COV/1464009/2017** Issue **1**

This issue replaces all previous issues

Job Description: 2016 Analysis

Job Location: 171023-8

Number of Samples included in this report **7**

Number of Test Results included in this report **14**

Job Received: **10 November 2017**

Analysis Commenced: **14 November 2017**

Signed:

Name: **P. Patel** Date: **16 November 2017**

Title: **Inorganic Team Leader**

ALS Environmental Ltd was not responsible for sampling unless otherwise stated.

Information on the methods of analysis and performance characteristics are available on request.
Opinions and interpretations expressed herein are outside the scope of UKAS accreditation. The results relate only to the items tested.
Tests marked 'Not UKAS Accredited' in this Report/Certificate are not included in the UKAS Accreditation Schedule for our laboratory.

This communication has been sent to you by ALS Environmental Ltd. Registered in England and Wales. Registration No. 02148934. Registered Office: ALS Environmental Limited, Torrington Avenue, Coventry, CV4 9GU.
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Certificate of Analysis

ANALYSED BY

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Report Number:	**COV/1464009/2017**	Issue	**1**
Laboratory Number:	**16577776**	Sample	**1** of **7**

Sample Source:	**ALS Life Sciences Limited**
Sample Point Description:	
Sample Description:	**16523695 SP2B-16**
Sample Matrix:	**Soil**
Sample Date/Time:	**20 October 2017**
Sample Received:	**10 November 2017**
Analysis Complete:	**15 November 2017**

Test Description	Result	Units	Analysis Date	Accreditation	Method
Description of Sample	Analyst Com	Text	14/11/2017	N Cov	70
Asbestos Identification	Analyst Com	Text	14/11/2017	Y Cov	70

Analyst Comments for 16577776: ASBESTOS COMMENTS Asbestos ID: Chrysotile, Description of Sample: Fibres in soil

This issue replaces all previous issues
Accreditation Codes: Y = UKAS / ISO17025 Accredited, N = Not UKAS / ISO17025 Accredited, M = MCERTS.
Analysed at: Che = Chester(CH4 9EP), Ctd = Coatbridge(ML5 4FR), Cov = Coventry(CV4 9GU), Ott = Otterbourne(SO21 2SW), S = Subcontracted, Trb = Subcontracted to Trowbridge(BA14 0XD), Wak = Wakefield(WF5 9TG).
For Microbiological determinands 0 or ND=Not Detected, For Legionella ND=Not Detected in volume of sample filtered. The LOD for the Legionella analysis will increase where the volume analysed is <1000g (1g is approximately equivalent to 1ml for sample volume analysed).

Signed: P. Patel

Name: **P. Patel** Date: **16 November 2017**

Title: **Inorganic Team Leader**

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Report Number:	**COV/1464009/2017**	Issue	**1**
Laboratory Number:	**16577777**	Sample	**2** of **7**

Sample Source:	**ALS Life Sciences Limited**
Sample Point Description:	
Sample Description:	**16523692 SP2B-18**
Sample Matrix:	**Soil**
Sample Date/Time:	**20 October 2017**
Sample Received:	**10 November 2017**
Analysis Complete:	**15 November 2017**

Test Description	Result	Units	Analysis Date	Accreditation		Method
Description of Sample	Analyst Com	Text	14/11/2017	N	Cov	70
Asbestos Identification	Analyst Com	Text	14/11/2017	Y	Cov	70

Analyst Comments for 16577777: ASBESTOS COMMENTS Asbestos ID: Non Detected, Description of Sample: Soil

This issue replaces all previous issues
Accreditation Codes: Y = UKAS / ISO17025 Accredited, N = Not UKAS / ISO17025 Accredited, M = MCERTS.
Analysed at: Che = Chester(CH4 9EP), Ctd = Coatbridge(ML5 4FR), Cov = Coventry(CV4 9GU), Ott = Otterbourne(SO21 2SW), S = Subcontracted, Trb = Subcontracted to Trowbridge(BA14 0XD), Wak = Wakefield(WF5 9TG).
For Microbiological determinands 0 or ND=Not Detected, For Legionella ND=Not Detected in volume of sample filtered. The LOD for the Legionella analysis will increase where the volume analysed is <1000g (1g is approximately equivalent to 1ml for sample volume analysed).

Signed: P. Patel

Name: **P. Patel** Date: **16 November 2017**

Title: **Inorganic Team Leader**

Certificate of Analysis

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4409

ALS

Report Number:	**COV/1464009/2017**	Issue	**1**
Laboratory Number:	**16577778**	Sample	**3** of **7**
Sample Source:	**ALS Life Sciences Limited**		
Sample Point Description:			
Sample Description:	**16523713 SP2B-20**		
Sample Matrix:	**Soil**		
Sample Date/Time:	**20 October 2017**		
Sample Received:	**10 November 2017**		
Analysis Complete:	**15 November 2017**		

Test Description	Result	Units	Analysis Date	Accreditation	Method
Description of Sample	Analyst Com	Text	14/11/2017	N Cov	70
Asbestos Identification	Analyst Com	Text	14/11/2017	Y Cov	70

Analyst Comments for 16577778: ASBESTOS COMMENTS Asbestos ID: Non Detected, Description of Sample: Soil

This issue replaces all previous issues
Accreditation Codes: Y = UKAS / ISO17025 Accredited, N = Not UKAS / ISO17025 Accredited, M = MCERTS.
Analysed at: Che = Chester(CH4 9EP), Ctd = Coatbridge(ML5 4FR), Cov = Coventry(CV4 9GU), Ott = Otterbourne(SO21 2SW), S = Subcontracted, Trb = Subcontracted to Trowbridge(BA14 0XD), Wak = Wakefield(WF5 9TG).
For Microbiological determinands 0 or ND=Not Detected, For Legionella ND=Not Detected in volume of sample filtered. The LOD for the Legionella analysis will increase where the volume analysed is <1000g (1g is approximately equivalent to 1ml for sample volume analysed).

Signed: P. Patel

Name: **P. Patel** Date: **16 November 2017**

Title: **Inorganic Team Leader**

Certificate of Analysis

ANALYSED BY

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ALS

Report Number:	**COV/1464009/2017**	Issue	**1**
Laboratory Number:	**16577779**	Sample	**4** of **7**
Sample Source:	**ALS Life Sciences Limited**		
Sample Point Description:			
Sample Description:	**16523685 SP2B-22**		
Sample Matrix:	**Soil**		
Sample Date/Time:	**20 October 2017**		
Sample Received:	**10 November 2017**		
Analysis Complete:	**15 November 2017**		

Test Description	Result	Units	Analysis Date	Accreditation		Method
Description of Sample	Analyst Com	Text	14/11/2017	N	Cov	70
Asbestos Identification	Analyst Com	Text	14/11/2017	Y	Cov	70

Analyst Comments for 16577779: ASBESTOS COMMENTS Asbestos ID: Non Detected, Description of Sample: Soil

This issue replaces all previous issues
Accreditation Codes: Y = UKAS / ISO17025 Accredited, N = Not UKAS / ISO17025 Accredited, M = MCERTS.
Analysed at: Che = Chester(CH4 9EP), Ctd = Coatbridge(ML5 4FR), Cov = Coventry(CV4 9GU), Ott = Otterbourne(SO21 2SW), S = Subcontracted, Trb = Subcontracted to Trowbridge(BA14 0XD), Wak = Wakefield(WF5 9TG).
For Microbiological determinands 0 or ND=Not Detected, For Legionella ND=Not Detected in volume of sample filtered. The LOD for the Legionella analysis will increase where the volume analysed is <1000g (1g is approximately equivalent to 1ml for sample volume analysed).

Signed: P. Patel

Name: **P. Patel** Date: **16 November 2017**

Title: **Inorganic Team Leader**

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Report Number:	**COV/1464009/2017**	Issue	**1**
Laboratory Number:	**16577780**	Sample	**5** of **7**

Sample Source:	**ALS Life Sciences Limited**
Sample Point Description:	
Sample Description:	**16523890 SP2B-24**
Sample Matrix:	**Soil**
Sample Date/Time:	**20 October 2017**
Sample Received:	**10 November 2017**
Analysis Complete:	**15 November 2017**

Test Description	Result	Units	Analysis Date	Accreditation		Method
Description of Sample	Analyst Com	Text	14/11/2017	N	Cov	70
Asbestos Identification	Analyst Com	Text	14/11/2017	Y	Cov	70

Analyst Comments for 16577780: ASBESTOS COMMENTS Asbestos ID: Non Detected, Description of Sample: Soil

This issue replaces all previous issues
Accreditation Codes: Y = UKAS / ISO17025 Accredited, N = Not UKAS / ISO17025 Accredited, M = MCERTS.
Analysed at: Che = Chester(CH4 9EP), Ctd = Coatbridge(ML5 4FR), Cov = Coventry(CV4 9GU), Ott = Otterbourne(SO21 2SW), S = Subcontracted, Trb = Subcontracted to Trowbridge(BA14 0XD), Wak = Wakefield(WF5 9TG).
For Microbiological determinands 0 or ND=Not Detected, For Legionella ND=Not Detected in volume of sample filtered. The LOD for the Legionella analysis will increase where the volume analysed is <1000g (1g is approximately equivalent to 1ml for sample volume analysed).

Signed: P. Patel

Name: **P. Patel** Date: **16 November 2017**

Title: **Inorganic Team Leader**

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ALS

Report Number:	**COV/1464009/2017**	Issue	**1**
Laboratory Number:	**16577781**	Sample	**6** of **7**
Sample Source:	**ALS Life Sciences Limited**		
Sample Point Description:			
Sample Description:	**16523884 SP2B-26**		
Sample Matrix:	**Soil**		
Sample Date/Time:	**20 October 2017**		
Sample Received:	**10 November 2017**		
Analysis Complete:	**15 November 2017**		

Test Description	Result	Units	Analysis Date	Accreditation	Method
Description of Sample	Analyst Com	Text	14/11/2017	N Cov	70
Asbestos Identification	Analyst Com	Text	14/11/2017	Y Cov	70

Analyst Comments for 16577781: ASBESTOS COMMENTS Asbestos ID: Amosite, Description of Sample: Fibres in soil

This issue replaces all previous issues
Accreditation Codes: Y = UKAS / ISO17025 Accredited, N = Not UKAS / ISO17025 Accredited, M = MCERTS.
Analysed at: Che = Chester(CH4 9EP), Ctd = Coatbridge(ML5 4FR), Cov = Coventry(CV4 9GU), Ott = Otterbourne(SO21 2SW), S = Subcontracted, Trb = Subcontracted to Trowbridge(BA14 0XD), Wak = Wakefield(WF5 9TG).
For Microbiological determinands 0 or ND=Not Detected, For Legionella ND=Not Detected in volume of sample filtered. The LOD for the Legionella analysis will increase where the volume analysed is <1000g (1g is approximately equivalent to 1ml for sample volume analysed).

Signed: P. Patel

Name: **P. Patel** Date: **16 November 2017**

Title: **Inorganic Team Leader**

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4409

ALS

Report Number:	**COV/1464009/2017**	Issue	**1**
Laboratory Number:	**16577782**	Sample	**7** of **7**

Sample Source:	**ALS Life Sciences Limited**
Sample Point Description:	
Sample Description:	**16523881 SP2B-28**
Sample Matrix:	**Soil**
Sample Date/Time:	**20 October 2017**
Sample Received:	**10 November 2017**
Analysis Complete:	**15 November 2017**

Test Description	Result	Units	Analysis Date	Accreditation	Method
Description of Sample	Analyst Com	Text	14/11/2017	N Cov	70
Asbestos Identification	Analyst Com	Text	14/11/2017	Y Cov	70

Analyst Comments for 16577782: ASBESTOS COMMENTS Asbestos ID: Non Detected, Description of Sample: Soil

This issue replaces all previous issues
Accreditation Codes: Y = UKAS / ISO17025 Accredited, N = Not UKAS / ISO17025 Accredited, M = MCERTS.
Analysed at: Che = Chester(CH4 9EP), Ctd = Coatbridge(ML5 4FR), Cov = Coventry(CV4 9GU), Ott = Otterbourne(SO21 2SW), S = Subcontracted, Trb = Subcontracted to Trowbridge(BA14 0XD), Wak = Wakefield(WF5 9TG).
For Microbiological determinands 0 or ND=Not Detected, For Legionella ND=Not Detected in volume of sample filtered. The LOD for the Legionella analysis will increase where the volume analysed is <1000g (1g is approximately equivalent to 1ml for sample volume analysed).

Signed: P. Patel

Name: **P. Patel** Date: **16 November 2017**

Title: **Inorganic Team Leader**

ANALYST COMMENTS FOR REPORT COV/1464009/2017

Issue 1 This issue replaces all previous issues

Date of Issue: **16 November 2017**

Sample No	Analysis Comments
16577776	ASBESTOS COMMENTS Asbestos ID: Chrysotile, Description of Sample: Fibres in soil
16577777	ASBESTOS COMMENTS Asbestos ID: Non Detected, Description of Sample: Soil
16577778	ASBESTOS COMMENTS Asbestos ID: Non Detected, Description of Sample: Soil
16577779	ASBESTOS COMMENTS Asbestos ID: Non Detected, Description of Sample: Soil
16577780	ASBESTOS COMMENTS Asbestos ID: Non Detected, Description of Sample: Soil
16577781	ASBESTOS COMMENTS Asbestos ID: Amosite, Description of Sample: Fibres in soil
16577782	ASBESTOS COMMENTS Asbestos ID: Non Detected, Description of Sample: Soil

Signed:

Name: **P. Patel** Date: **16 November 2017**

Title: **Inorganic Team Leader**

DETERMINAND COMMENTS FOR REPORT COV/1464009/2017

ISSUE 1

This issue replaces all previous issues

Date of Issue: 16 November 2017

Sample No	Description	Determinand	Comments
16577776	16523695 SP2B-16	Asbestos Identification	{/*}Chrysotile{*/}
16577776	16523695 SP2B-16	Description of Sample	{/*}Fibres in soil{*/}
16577777	16523692 SP2B-18	Asbestos Identification	{/*}Non Detected{*/}
16577777	16523692 SP2B-18	Description of Sample	{/*}Soil{*/}
16577778	16523713 SP2B-20	Asbestos Identification	{/*}Non Detected{*/}
16577778	16523713 SP2B-20	Description of Sample	{/*}Soil{*/}
16577779	16523685 SP2B-22	Asbestos Identification	{/*}Non Detected{*/}
16577779	16523685 SP2B-22	Description of Sample	{/*}Soil{*/}
16577780	16523890 SP2B-24	Asbestos Identification	{/*}Non Detected{*/}
16577780	16523890 SP2B-24	Description of Sample	{/*}Soil{*/}
16577781	16523884 SP2B-26	Asbestos Identification	{/*}Amosite{*/}
16577781	16523884 SP2B-26	Description of Sample	{/*}Fibres in soil{*/}
16577782	16523881 SP2B-28	Asbestos Identification	{/*}Non Detected{*/}
16577782	16523881 SP2B-28	Description of Sample	{/*}Soil{*/}

Signed:

Name: **P. Patel** Date: **16 November 2017**

Title: **Inorganic Team Leader**

Appendix

General

1. Results are expressed on a dry weight basis (dried at 35ºC) for all soil analyses except for the following: NRA and CEN Leach tests, flash point LOI, pH, ammonium as NH4 by the BRE method, VOC TICs and SVOC TICs.

2. Samples will be run in duplicate upon request, but an additional charge may be incurred.

3. If sufficient sample is received a sub sample will be retained free of charge for 30 days after analysis is completed (e-mailed) for all sample types unless the sample is destroyed on testing. The prepared soil sub sample that is analysed for asbestos will be retained for a period of 6 months after the analysis date. All bulk samples will be retained for a period of 6 months after the analysis date. All samples received and not scheduled will be disposed of one month after the date of receipt unless we are instructed to the contrary. Once the initial period has expired, a storage charge will be applied for each month or part thereof until the client cancels the request for sample storage. ALS reserve the right to charge for samples received and stored but not analysed.

4. With respect to turnaround, we will always endeavour to meet client requirements wherever possible, but turnaround times cannot be absolutely guaranteed due to so many variables beyond our control.

5. We take responsibility for any test performed by sub-contractors (marked with an asterisk). We endeavour to use UKAS/MCERTS Accredited Laboratories, who either complete a quality questionnaire or are audited by ourselves. For some determinands there are no UKAS/MCERTS Accredited Laboratories, in this instance a laboratory with a known track record will be utilised.

6. When requested, the individual sub sample scheduled will be analysed in house for the presence of asbestos fibres and asbestos containing material by our documented in house method TM048 based on HSG 248 (2005), which is accredited to ISO17025. If a specific asbestos fibre type is not found this will be reported as “Not detected”. If no asbestos fibre types are found all will be reported as “Not detected” and the sub sample analysed deemed to be clear of asbestos. If an asbestos fibre type is found it will be reported as detected (for each fibre type found). Testing can be carried out on asbestos positive samples, but, due to Health and Safety considerations, may be replaced by alternative tests or reported as No Determination Possible (NDP). The quantity of asbestos present is not determined unless specifically requested.

7. If no separate volatile sample is supplied by the client, or if a headspace or sediment is present in the volatile sample, the integrity of the data may be compromised. This will be flagged up as an invalid VOC on the test schedule and the result marked as deviating on the test certificate.

8. If appropriate preserved bottles are not received preservation will take place on receipt. However, the integrity of the data may be compromised.

9. NDP - No determination possible due to insufficient/unsuitable sample.

10. Metals in water are performed on a filtered sample, and therefore represent dissolved metals - total metals must be requested separately.

11. Results relate only to the items tested.

12. LoDs (Limit of Detection) for wet tests reported on a dry weight basis are not corrected for moisture content.

13. **Surrogate recoveries** - Surrogates are added to your sample to monitor recovery of the test requested. A % recovery is reported, results are not corrected for the recovery measured. Typical recoveries for organics tests are 70-130%, they are generally wider for volatiles analysis, 50-150%. Recoveries in soils are affected by organic rich or clay rich matrices. Waters can be affected by remediation fluids or high amounts of sediment. Test results are only ever reported if all of the associated quality checks pass; it is assumed that all recoveries outside of the values above are due to matrix affect.

14. **Product analyses** - Organic analyses on products can only be semi-quantitative due to the matrix effects and high dilution factors employed.

15. Phenols monohydric by HPLC include phenol, cresols (2-Methylphenol, 3-Methylphenol and 4-Methylphenol) and Xylenols (2,3 Dimethylphenol, 2,4 Dimethylphenol, 2,5 Dimethylphenol, 2,6 Dimethylphenol, 3,4 Dimethyphenol, 3,5 Dimethylphenol).

16. Total of 5 speciated phenols by HPLC includes Phenol, 2,3,5-Trimethyl Phenol, 2-Isopropylphenol, Cresols and Xylenols (as detailed in 15).

17. Stones/debris are not routinely removed. We always endeavour to take a representative sub sample from the received sample.

18. In certain circumstances the method detection limit may be elevated due to the sample being outside the calibration range. Other factors that may contribute to this include possible interferences. In both cases the sample would be diluted which would cause the method detection limit to be raised.

19. Mercury results quoted on soils will not include volatile mercury as the analysis is performed on a dried and crushed sample.

20. For leachate preparations other than Zero Headspace Extraction (ZHE) volatile loss may occur.

21. For the BSEN 12457-3 two batch process to allow the cumulative release to be calculated, the volume of the leachate produced is measured and filtered for all tests. We therefore cannot carry out any unfiltered analysis. The tests affected include volatiles GCFID/GCMS and all subcontracted analysis.

22. We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample. Other coarse granular material such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

23. Analysis and identification of specific compounds using GCFID is by retention time only, and we routinely calibrate and quantify for benzene, toluene, ethylbenzenes and xylenes (BTEX). For total volatiles in the C5-C12 range, the total area of the chromatogram is integrated and expressed as ug/kg or ug/l. Although this analysis is commonly used for the quantification of gasoline range organics (GRO), the system will also detect other compounds such as chlorinated solvents, and this may lead to a falsely high result with respect to hydrocarbons only. It is not possible to specifically identify these non-hydrocarbons, as standards are not routinely run for any other compounds, and for more definitive identification, volatiles by GCMS should be utilised.

24. **Tentatively Identified Compounds (TICs)** are non-target peaks in VOC and SVOC analysis. All non-target peaks detected with a concentration above the LoD are subjected to a mass spectral library search. Non-target peaks with a library search confidence of >75% are reported based on the best mass spectral library match. When a non-target peak with a library search confidence of <75% is detected it is reported as “mixed hydrocarbons”. Non-target compounds identified from the scan data are semi-quantified relative to one of the deuterated internal standards, under the same chromatographic conditions as the target compounds. This result is reported as a semi-quantitative value and reported as Tentatively Identified Compounds (TICs). TICs are outside the scope of UKAS accreditation and are not moisture corrected.

Sample Deviations

If a sample is classed as deviated then the associated results may be compromised.

1	**Container with Headspace provided for volatiles analysis**
2	**Incorrect container received**
3	**Deviation from method**
4	**Holding time exceeded before sample received**
5	**Samples exceeded holding time before presevation was performed**
§	**Sampled on date not provided**
♦	**Sample holding time exceeded in laboratory**
@	**Sample holding time exceeded due to sampled on date**
&	**Sample Holding Time exceeded - Late arrival of instructions.**

Asbestos

Identification of Asbestos in Bulk Materials & Soils

The results for identification of asbestos in bulk materials are obtained from supplied bulk materials which have been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

The results for identification of asbestos in soils are obtained from a homogenised sub sample which has been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

Asbestos Type	Common Name
Chrysotile	White Asbestos
Amosite	Brown Asbestos
Crocidolite	Blue Asbestos
Fibrous Actinolite	-
Fibrous Anthophyllite	-
Fibrous Tremolite	-

Visual Estimation Of Fibre Content

Estimation of fibre content is not permitted as part of our UKAS accredited test other than: - Trace - Where only one or two asbestos fibres were identified.

Further guidance on typical asbestos fibre content of manufactured products can be found in HSG 264.

The identification of asbestos containing materials and soils falls within our schedule of tests for which we hold UKAS accreditation, however opinions, interpretations and all other information contained in the report are outside the scope of UKAS accreditation.

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Hawarden
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Website: www.alsenvironmental.co.uk

Atkins Global Ltd
Project Jonah site office
Llan Coed House
Suite 24
Coed Darcy
Llandarcy
SA10 6HJ

Attention: John Fitzgerald

CERTIFICATE OF ANALYSIS

Date:	07 November 2017
Customer:	H_ATKINS_LDC
Sample Delivery Group (SDG):	171024-25
Your Reference:	
Location:	Llanwern
Report No:	431623

We received 12 samples on Tuesday October 24, 2017 and 12 of these samples were scheduled for analysis which was completed on Tuesday November 07, 2017. Accredited laboratory tests are defined within the report, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation.

Should this report require incorporation into client reports, it must be used in its entirety and not simply with the data sections alone.

Chemical testing (unless subcontracted) performed at ALS Environmental Hawarden (Method codes TM) or ALS Environmental Aberdeen (Method codes S).

Approved By:

Sonia McWhan
Operations Manager

ALS Life Sciences Limited. Registered Office: Units 7 & 8 Hawarden Business Park, Manor Road, Hawarden, Deeside, CH5 3US. Registered in England and Wales No. 4057291.

CERTIFICATE OF ANALYSIS

SDG:	171024-25	**Client Reference:**		**Report Number:**	431623
Location:	Llanwern	**Order Number:**	LLA357	**Superseded Report:**	

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
16416881	SP2B-29		0.00 - 0.00	23/10/2017
16416913	SP2B-30		0.00 - 0.00	23/10/2017
16416918	W57-01		0.00 - 0.00	23/10/2017
16416922	W57-02		0.00 - 0.00	23/10/2017
16416926	W57-03		0.00 - 0.00	23/10/2017
16416930	W57-04		0.00 - 0.00	23/10/2017
16416935	W57-05		0.00 - 0.00	23/10/2017
16416939	W57-06		0.00 - 0.00	23/10/2017
16416945	W57-07		0.00 - 0.00	23/10/2017
16416888	W57-08		0.00 - 0.00	23/10/2017
16416901	W57-09		0.00 - 0.00	23/10/2017
16416908	W57-10		0.00 - 0.00	23/10/2017

Maximum Sample/Coolbox Temperature (°C) : **14.0**

ISO5667-3 Water quality - Sampling - Part3 -
During Transportation samples shall be stored in a cooling device capable of maintaining a temperature of (5±3)°C.

ALS have data which show that a cool box with 4 frozen icepacks is capable of maintaining pre-chilled samples at a temperature of (5±3)°C for a period of up to 24hrs.

Only received samples which have had analysis scheduled will be shown on the following pages.

Validated

CERTIFICATE OF ANALYSIS

SDG: 171024-25 **Client Reference:** **Report Number:** 431623
Location: Llanwern **Order Number:** LLA357 **Superseded Report:**

Results Legend

X Test

N No Determination Possible

Sample Types -
S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water
Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

			Lab Sample No(s)	16416881	16416913	16416918	16416922	16416926	16416930	16416935	16416939
			Customer Sample Reference	SP2B-29	SP2B-30	W57-01	W57-02	W57-03	W57-04	W57-05	W57-06
			AGS Reference								
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
			Container	250g Amber Jar (ALE210)	400g Tub (ALE214)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	400g Tub (ALE214)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	400g Tub (ALE214)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)
			Sample Type	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
Alkali Metals by iCap-OES (Soil)	All	NDPs: 0 Tests: 6		X					X					X				X				
Ammonium Soil by Titration	All	NDPs: 0 Tests: 12		X			X		X			X		X			X	X			X	
Anions by Kone (soil)	All	NDPs: 0 Tests: 6		X					X					X				X				
Asbestos ID*	All	NDPs: 0 Tests: 6			X					X					X				X			
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 12		X			X		X			X		X			X	X			X	
EPH CWG (Aliphatic) GC (S)	All	NDPs: 0 Tests: 12		X			X		X			X		X			X	X			X	
EPH CWG (Aromatic) GC (S)	All	NDPs: 0 Tests: 12		X			X		X			X		X			X	X			X	
GRO by GC-FID (S)	All	NDPs: 0 Tests: 12				X		X			X		X			X	X			X		X
Metals in solid samples by OES	All	NDPs: 0 Tests: 12		X			X		X			X		X			X	X			X	
PAH by GCMS	All	NDPs: 0 Tests: 12		X			X		X			X		X			X	X			X	
pH	All	NDPs: 0 Tests: 12		X			X		X			X		X			X	X			X	
Phenols by HPLC (S)	All	NDPs: 0 Tests: 12		X			X		X			X		X			X	X			X	
Sample description	All	NDPs: 0 Tests: 12		X			X		X			X		X			X	X			X	
Total Organic Carbon	All	NDPs: 0 Tests: 12		X			X		X			X		X			X	X			X	
Total Sulphate	All	NDPs: 0 Tests: 6		X			X		X					X				X				

16416908	W57-10		0.00 - 0.00	60g VOC (ALE215)	S	
				250g Amber Jar (ALE210)	S	
16416901	W57-09		0.00 - 0.00	60g VOC (ALE215)	S	X
				400g Tub (ALE214)	S	
				250g Amber Jar (ALE210)	S	
16416888	W57-08		0.00 - 0.00	60g VOC (ALE215)	S	X
				250g Amber Jar (ALE210)	S	
16416945	W57-07		0.00 - 0.00	60g VOC (ALE215)	S	X
				400g Tub (ALE214)	S	
				250g Amber Jar (ALE210)	S	

Validated

CERTIFICATE OF ANALYSIS

SDG: 171024-25 **Client Reference:** **Report Number:** 431623
Location: Llanwern **Order Number:** LLA357 **Superseded Report:**

Results Legend

X Test

N No Determination Possible

Sample Types -
S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water
Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

			Lab Sample No(s)	Customer Sample Reference	AGS Reference	Depth (m)	Container	Sample Type
			16416881	SP2B-29		0.00 - 0.00	250g Amber Jar (ALE210)	S
							400g Tub (ALE214)	S
							60g VOC (ALE215)	S
			16416913	SP2B-30		0.00 - 0.00	250g Amber Jar (ALE210)	S
							60g VOC (ALE215)	S
			16416918	W57-01		0.00 - 0.00	250g Amber Jar (ALE210)	S
							400g Tub (ALE214)	S
							60g VOC (ALE215)	S
			16416922	W57-02		0.00 - 0.00	250g Amber Jar (ALE210)	S
							60g VOC (ALE215)	S
			16416926	W57-03		0.00 - 0.00	250g Amber Jar (ALE210)	S
							400g Tub (ALE214)	S
							60g VOC (ALE215)	S
			16416930	W57-04		0.00 - 0.00	250g Amber Jar (ALE210)	S
			16416935	W57-05		0.00 - 0.00	250g Amber Jar (ALE210)	S
							400g Tub (ALE214)	S
							60g VOC (ALE215)	S
			16416939	W57-06		0.00 - 0.00	250g Amber Jar (ALE210)	S
							60g VOC (ALE215)	S
Total Sulphur	All	NDPs: 0 Tests: 6	X					
							X	
							X	
			X					
							X	
							X	
							X	
							X	
							X	
TPH CWG GC (S)	All	NDPs: 0 Tests: 12	X					
				X				
							X	
							X	
							X	
							X	
							X	

16416908	W57-10		0.00 - 0.00	60g VOC (ALE215)	S			
				250g Amber Jar (ALE210)	S		X	
16416901	W57-09		0.00 - 0.00	60g VOC (ALE215)	S			
				400g Tub (ALE214)	S			
				250g Amber Jar (ALE210)	S		X	
16416888	W57-08		0.00 - 0.00	60g VOC (ALE215)	S			
				250g Amber Jar (ALE210)	S		X	
16416945	W57-07		0.00 - 0.00	60g VOC (ALE215)	S			
				400g Tub (ALE214)	S			
				250g Amber Jar (ALE210)	S	X		

Sample Descriptions

Grain Sizes

very fine	<0.063mm	fine	0.063mm - 0.1mm	medium	0.1mm - 2mm	coarse	2mm - 10mm	very coarse	>10mm

Lab Sample No(s)	Customer Sample Ref.	Depth (m)	Colour	Description	Inclusions	Inclusions 2
16416881	SP2B-29	0.00 - 0.00	Dark Brown	Loamy Sand	Stones	None
16416913	SP2B-30	0.00 - 0.00	Dark Brown	Sandy Loam	Stones	Vegetation
16416918	W57-01	0.00 - 0.00	Dark Brown	Sandy Loam	Vegetation	Stones
16416922	W57-02	0.00 - 0.00	Dark Brown	Sandy Loam	Stones	Vegetation
16416926	W57-03	0.00 - 0.00	Dark Brown	Sandy Loam	Stones	Vegetation
16416930	W57-04	0.00 - 0.00	Dark Brown	Sandy Loam	Stones	None
16416935	W57-05	0.00 - 0.00	Dark Brown	Sandy Loam	Stones	None
16416939	W57-06	0.00 - 0.00	Dark Brown	Sandy Loam	Stones	Vegetation
16416945	W57-07	0.00 - 0.00	Dark Brown	Sandy Loam	Stones	None
16416888	W57-08	0.00 - 0.00	Dark Brown	Sandy Loam	Stones	None
16416901	W57-09	0.00 - 0.00	Dark Brown	Sandy Clay Loam	Stones	None
16416908	W57-10	0.00 - 0.00	Dark Brown	Clay Loam	Stones	Vegetation

These descriptions are only intended to act as a cross check if sample identities are questioned, and to provide a log of sample matrices with respect to MCERTS validation. They are not intended as full geological descriptions.

We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally ocurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample.

Other coarse granular materials such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

CERTIFICATE OF ANALYSIS

SDG: 171024-25 **Client Reference:** **Report Number:** 431623
Location: Llanwern **Order Number:** LLA357 **Superseded Report:**

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	SP2B-29	SP2B-30	W57-01	W57-02	W57-03	W57-04
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	23/10/2017	23/10/2017	23/10/2017	23/10/2017	23/10/2017	23/10/2017
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	24/10/2017	24/10/2017	24/10/2017	24/10/2017	24/10/2017	24/10/2017
			SDG Ref	171024-25	171024-25	171024-25	171024-25	171024-25	171024-25
			Lab Sample No.(s)	16416881	16416913	16416918	16416922	16416926	16416930
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		14	10	12	13	13	12
Actinolite*	-	SUB (ASB)		Not Detected #		Not Detected #		Not Detected #	
Amosite*	-	SUB (ASB)		Not Detected #		Not Detected #		Not Detected #	
Anthophyllite*	-	SUB (ASB)		Not Detected #		Not Detected #		Not Detected #	
Chrysotile*	-	SUB (ASB)		Not Detected #		Not Detected #		Not Detected #	
Crocidolite*	-	SUB (ASB)		Not Detected #		Not Detected #		Not Detected #	
Non-Asbestos Fibres*	-	SUB (ASB)		Not Detected #		Not Detected #		Not Detected #	
Tremolite*	-	SUB (ASB)		Not Detected #		Not Detected #		Not Detected #	
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	<12 M	<12 M	<12 M	<12 M	<12 M
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M	0.0115 M	<0.01 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M
Sulphur, Total	<0.02 %	TM132		0.268		0.351		0.222	
Sulphate, Total potential	<0.06 %	TM132		0.804		1.05		0.666	
Soil Organic Matter (SOM)	<0.35 %	TM132		11.2 #	14.6 #	3.45 #	21.4 #	1.51 #	37.4 #
pH	1 pH Units	TM133		9.26 M	8.62 M	9.12 M	8.69 M	9.2 M	8.75 M
Cyanide, Total	<1 mg/kg	TM153		<1 M	<1 M	<1 M	<1 M	<1 M	1.55 M
Arsenic	<0.6 mg/kg	TM181		<6 M	<6 M	3.85 M	3.97 M	<6 M	5.58 M
Cadmium	<0.02 mg/kg	TM181		0.785 M	0.908 M	0.19 M	0.312 M	0.532 M	0.131 M
Chromium	<0.9 mg/kg	TM181		506 M	283 M	75.4 M	174 M	66.7 M	138 M
Copper	<1.4 mg/kg	TM181		<14 M	25.3 M	5.9 M	14.4 M	<14 M	7.54 M
Iron	<1000 mg/kg	TM181		108000 #	123000 #	51600 #	51400 #	56800 #	67100 #
Lead	<0.7 mg/kg	TM181		69.1 M	98.5 M	26.3 M	24.9 M	44.1 M	55.5 M
Manganese	<0.13 mg/kg	TM181		30300 M	16400 M	7510 M	9610 M	5990 M	9270 M
Mercury	<0.14 mg/kg	TM181		<1.4 M	<1.4 M	<0.14 M	<0.14 M	<1.4 M	<0.14 M
Nickel	<0.2 mg/kg	TM181		8.22 M	13.8 M	10.5 M	10.6 M	21.9 M	8.05 M
Selenium	<1 mg/kg	TM181		15.5 #	<10 #	2.79 #	6.85 #	<10 #	3.9 #
Vanadium	<0.2 mg/kg	TM181		503 #	305 #	88.8 #	282 #	106 #	156 #
Zinc	<1.9 mg/kg	TM181		183 M	375 M	86.9 M	125 M	139 M	177 M
Sulphate, acid soluble (total)	<0.02 %	TM221		0.265		0.701		0.301	
Calcium	<21 mg/kg	TM224		217000		120000		93200	
Magnesium	<8 mg/kg	TM224		15600		13700		13500	

Validated

CERTIFICATE OF ANALYSIS

SDG: 171024-25 **Client Reference:** **Report Number:** 431623
Location: Llanwern **Order Number:** LLA357 **Superseded Report:**

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	SP2B-29	SP2B-30	W57-01	W57-02	W57-03	W57-04
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	23/10/2017	23/10/2017	23/10/2017	23/10/2017	23/10/2017	23/10/2017
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	24/10/2017	24/10/2017	24/10/2017	24/10/2017	24/10/2017	24/10/2017
			SDG Ref	171024-25	171024-25	171024-25	171024-25	171024-25	171024-25
			Lab Sample No.(s)	16416881	16416913	16416918	16416922	16416926	16416930
			AGS Reference						
Soluble Sulphate 2:1 extract as SO4 BRE	<0.004 g/l	TM243		0.0564 M		0.149 M		0.0507 M	

CERTIFICATE OF ANALYSIS

SDG:	171024-25	**Client Reference:**		**Report Number:**	431623
Location:	Llanwern	**Order Number:**	LLA357	**Superseded Report:**	

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	W57-05	W57-06	W57-07	W57-08	W57-09	W57-10
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	23/10/2017	23/10/2017	23/10/2017	23/10/2017	23/10/2017	23/10/2017
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	24/10/2017	24/10/2017	24/10/2017	24/10/2017	24/10/2017	24/10/2017
			SDG Ref	171024-25	171024-25	171024-25	171024-25	171024-25	171024-25
			Lab Sample No.(s)	16416935	16416939	16416945	16416888	16416901	16416908
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		16	24	15	12	21	24
Actinolite*	-	SUB (ASB)		Not Detected #		Not Detected #		Not Detected #	
Amosite*	-	SUB (ASB)		Not Detected #		Not Detected #		Not Detected #	
Anthophyllite*	-	SUB (ASB)		Not Detected #		Not Detected #		Not Detected #	
Chrysotile*	-	SUB (ASB)		Not Detected #		Not Detected #		Not Detected #	
Crocidolite*	-	SUB (ASB)		Not Detected #		Not Detected #		Not Detected #	
Non-Asbestos Fibres*	-	SUB (ASB)		Not Detected #		Not Detected #		Not Detected #	
Tremolite*	-	SUB (ASB)		Not Detected #		Not Detected #		Not Detected #	
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	<12 M	<12 M	<12 M	<12 M	<12 M
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	0.0114 M	<0.01 M	<0.01 M
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	0.0114 M	<0.01 M	0.0132 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M
Sulphur, Total	<0.02 %	TM132		0.324		0.352		0.292	
Sulphate, Total potential	<0.06 %	TM132		0.972		1.06		0.876	
Soil Organic Matter (SOM)	<0.35 %	TM132		79.6 #	56.5 #	10.3 #	39.1 #	3.02 #	10.6 #
pH	1 pH Units	TM133		9.08 M	8.85 M	9.63 M	8.83 M	8.71 M	7.95 M
Cyanide, Total	<1 mg/kg	TM153		1.14 M	2.12 M	<1 M	<1 M	29.4 M	<1 M
Arsenic	<0.6 mg/kg	TM181		2.91 M	<6 M	8.49 M	3.78 M	<6 M	9.94 M
Cadmium	<0.02 mg/kg	TM181		<0.02 M	0.295 M	0.578 M	<0.02 M	0.651 M	0.186 M
Chromium	<0.9 mg/kg	TM181		121 M	204 M	153 M	248 M	65 M	20 M
Copper	<1.4 mg/kg	TM181		12 M	22.9 M	23.9 M	4.73 M	19.6 M	12.2 M
Iron	<1000 mg/kg	TM181		33100 #	57600 #	80800 #	75300 #	64200 #	39000 #
Lead	<0.7 mg/kg	TM181		16.5 M	25.8 M	55.9 M	21.3 M	45.2 M	30.5 M
Manganese	<0.13 mg/kg	TM181		6330 M	11100 M	12900 M	14500 M	4720 M	2010 M
Mercury	<0.14 mg/kg	TM181		<0.14 M	<1.4 M	<1.4 M	<0.14 M	<1.4 M	0.388 M
Nickel	<0.2 mg/kg	TM181		10.2 M	36 M	19.1 M	7.62 M	26.9 M	24.7 M
Selenium	<1 mg/kg	TM181		4.28 #	<10 #	<10 #	6.47 #	<10 #	<1 #
Vanadium	<0.2 mg/kg	TM181		84.6 #	200 #	163 #	251 #	154 #	54.1 #
Zinc	<1.9 mg/kg	TM181		64 M	145 M	172 M	77.6 M	206 M	117 M
Sulphate, acid soluble (total)	<0.02 %	TM221		0.122		0.296		0.242	
Calcium	<21 mg/kg	TM224		74900		112000		74400	
Magnesium	<8 mg/kg	TM224		11400		12000		10600	

CERTIFICATE OF ANALYSIS

SDG: 171024-25 **Client Reference:** **Report Number:** 431623
Location: Llanwern **Order Number:** LLA357 **Superseded Report:**

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	W57-05	W57-06	W57-07	W57-08	W57-09	W57-10
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	23/10/2017	23/10/2017	23/10/2017	23/10/2017	23/10/2017	23/10/2017
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	24/10/2017	24/10/2017	24/10/2017	24/10/2017	24/10/2017	24/10/2017
			SDG Ref	171024-25	171024-25	171024-25	171024-25	171024-25	171024-25
			Lab Sample No.(s)	16416935	16416939	16416945	16416888	16416901	16416908
			AGS Reference						
Soluble Sulphate 2:1 extract as SO4 BRE	<0.004 g/l	TM243		0.0595 M		0.127 M		0.0747 M	

Validated

CERTIFICATE OF ANALYSIS

SDG: 171024-25 **Client Reference:** **Report Number:** 431623
Location: Llanwern **Order Number:** LLA357 **Superseded Report:**

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	SP2B-29	SP2B-30	W57-01	W57-02	W57-03	W57-04
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	23/10/2017	23/10/2017	23/10/2017	23/10/2017	23/10/2017	23/10/2017
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	24/10/2017	24/10/2017	24/10/2017	24/10/2017	24/10/2017	24/10/2017
			SDG Ref	171024-25	171024-25	171024-25	171024-25	171024-25	171024-25
			Lab Sample No.(s)	16416881	16416913	16416918	16416922	16416926	16416930
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		102	84.1	92.7	91.7	92.9	90
Acenaphthene-d10 % recovery**	%	TM218		101	74.9	89.7	89.6	92.4	89
Phenanthrene-d10 % recovery**	%	TM218		102	67.1	88.4	88.2	92.1	87.5
Chrysene-d12 % recovery**	%	TM218		112	65.5	89.6	100	101	95.2
Perylene-d12 % recovery**	%	TM218		112	68.7	94.5	105	105	95.9
Naphthalene	<0.009 mg/kg	TM218		12.6 M	3.35 M	0.766 M	9.29 M	3.4 M	30.7 M
Acenaphthylene	<0.012 mg/kg	TM218		5.51 M	0.5 M	0.603 M	4.46 M	2.2 M	5.83 M
Acenaphthene	<0.008 mg/kg	TM218		0.484 M	0.0622 M	0.0518 M	0.285 M	0.188 M	0.327 M
Fluorene	<0.01 mg/kg	TM218		7.6 M	0.428 M	0.466 M	2.31 M	1.87 M	2.46 M
Phenanthrene	<0.015 mg/kg	TM218		67.3 M	2.07 M	3.77 M	14.8 M	13.4 M	15.9 M
Anthracene	<0.016 mg/kg	TM218		12 M	0.728 M	1.13 M	6.85 M	8.64 M	5.92 M
Fluoranthene	<0.017 mg/kg	TM218		92.3 M	2.67 M	6.85 M	49.9 M	41.3 M	36 M
Pyrene	<0.015 mg/kg	TM218		55.6 M	1.79 M	4.79 M	36 M	29 M	26.5 M
Benz(a)anthracene	<0.014 mg/kg	TM218		36.3 M	1.76 M	3.15 M	23.4 M	18.8 M	19 M
Chrysene	<0.01 mg/kg	TM218		23 M	1.48 M	3.11 M	22.5 M	14.5 M	15.7 M
Benzo(b)fluoranthene	<0.015 mg/kg	TM218		37.8 M	1.86 M	4.56 M	32.6 M	19.3 M	23.4 M
Benzo(k)fluoranthene	<0.014 mg/kg	TM218		15.5 M	0.861 M	1.87 M	13.9 M	8.47 M	9.46 M
Benzo(a)pyrene	<0.015 mg/kg	TM218		28.2 M	1.5 M	3.09 M	23.6 M	16.1 M	18.6 M
Indeno(1,2,3-cd)pyrene	<0.018 mg/kg	TM218		16.3 M	0.923 M	1.95 M	14.9 M	9.53 M	11.9 M
Dibenzo(a,h)anthracene	<0.023 mg/kg	TM218		5.51 M	0.298 M	0.549 M	4.74 M	2.89 M	3.72 M
Benzo(g,h,i)perylene	<0.024 mg/kg	TM218		16.4 M	1 M	2.09 M	16 M	10.3 M	13.1 M
PAH, Total Detected USEPA 16	<0.118 mg/kg	TM218		432	21.3	38.8	276	200	238

Validated

CERTIFICATE OF ANALYSIS

SDG: 171024-25 **Client Reference:** **Report Number:** 431623
Location: Llanwern **Order Number:** LLA357 **Superseded Report:**

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	W57-05	W57-06	W57-07	W57-08	W57-09	W57-10
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	23/10/2017	23/10/2017	23/10/2017	23/10/2017	23/10/2017	23/10/2017
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	24/10/2017	24/10/2017	24/10/2017	24/10/2017	24/10/2017	24/10/2017
			SDG Ref	171024-25	171024-25	171024-25	171024-25	171024-25	171024-25
			Lab Sample No.(s)	16416935	16416939	16416945	16416888	16416901	16416908
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		101	103	103	103	107	110
Acenaphthene-d10 % recovery**	%	TM218		101	103	101	102	108	109
Phenanthrene-d10 % recovery**	%	TM218		101	102	97.9	102	106	107
Chrysene-d12 % recovery**	%	TM218		112	115	108	114	110	110
Perylene-d12 % recovery**	%	TM218		111	117	111	114	113	116
Naphthalene	<0.009 mg/kg	TM218		18.4 M	27.8 M	10 M	13.3 M	1.84 M	1.02 M
Acenaphthylene	<0.012 mg/kg	TM218		6.76 M	9.79 M	3.27 M	3.52 M	0.732 M	0.529 M
Acenaphthene	<0.008 mg/kg	TM218		0.452 M	0.63 M	0.275 M	2.49 M	0.0856 M	0.0417 M
Fluorene	<0.01 mg/kg	TM218		3.94 M	5.27 M	2.03 M	3.79 M	0.359 M	0.206 M
Phenanthrene	<0.015 mg/kg	TM218		27.6 M	34.5 M	15.5 M	21.2 M	3.52 M	1.94 M
Anthracene	<0.016 mg/kg	TM218		10.8 M	13.1 M	5.82 M	8.08 M	1.36 M	1.06 M
Fluoranthene	<0.017 mg/kg	TM218		76.3 M	102 M	43.3 M	44.3 M	10.1 M	9.67 M
Pyrene	<0.015 mg/kg	TM218		54.5 M	72.9 M	31 M	33.3 M	7.2 M	6.56 M
Benz(a)anthracene	<0.014 mg/kg	TM218		34.6 M	46 M	19.5 M	24.7 M	6.07 M	5.75 M
Chrysene	<0.01 mg/kg	TM218		28.6 M	37.6 M	17.6 M	22.7 M	4.98 M	4.82 M
Benzo(b)fluoranthene	<0.015 mg/kg	TM218		33.6 M	52 M	26.1 M	29.8 M	7.73 M	7.18 M
Benzo(k)fluoranthene	<0.014 mg/kg	TM218		16.8 M	24.1 M	9.59 M	11.9 M	3.1 M	2.8 M
Benzo(a)pyrene	<0.015 mg/kg	TM218		32.1 M	44.4 M	17.9 M	22.7 M	5.78 M	5.43 M
Indeno(1,2,3-cd)pyrene	<0.018 mg/kg	TM218		21.1 M	29.1 M	11.1 M	13.6 M	3.9 M	3.65 M
Dibenzo(a,h)anthracene	<0.023 mg/kg	TM218		6.65 M	9.27 M	3.58 M	4.92 M	1.22 M	1.13 M
Benzo(g,h,i)perylene	<0.024 mg/kg	TM218		22 M	31.6 M	11.6 M	15 M	4.34 M	4.03 M
PAH, Total Detected USEPA 16	<0.118 mg/kg	TM218		394	540	228	275	62.3	55.8

CERTIFICATE OF ANALYSIS

SDG: 171024-25 **Client Reference:** **Report Number:** 431623
Location: Llanwern **Order Number:** LLA357 **Superseded Report:**

TPH CWG (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	SP2B-29	SP2B-30	W57-01	W57-02	W57-03	W57-04
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	23/10/2017	23/10/2017	23/10/2017	23/10/2017	23/10/2017	23/10/2017
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	24/10/2017	24/10/2017	24/10/2017	24/10/2017	24/10/2017	24/10/2017
			SDG Ref	171024-25	171024-25	171024-25	171024-25	171024-25	171024-25
			Lab Sample No.(s)	16416881	16416913	16416918	16416922	16416926	16416930
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		22	24	38	16	17	17
GRO TOT (Moisture Corrected)	<0.044 mg/kg	TM089		<0.176 M	<0.176 M	<0.176 M	<0.176 M	<0.176 M	0.302 M
Methyl tertiary butyl ether (MTBE)	<0.005 mg/kg	TM089		<0.02 #	<0.02 #	<0.02 #	<0.02 #	<0.02 #	<0.02 #
Benzene	<0.01 mg/kg	TM089		<0.04 M	<0.04 M	<0.04 M	<0.04 M	<0.04 M	<0.04 M
Toluene	<0.002 mg/kg	TM089		0.0139 M	0.0123 M	0.0217 M	0.0262 M	0.0115 M	<0.008 M
Ethylbenzene	<0.003 mg/kg	TM089		<0.012 M	<0.012 M	<0.012 M	<0.012 M	<0.012 M	<0.012 M
m,p-Xylene	<0.006 mg/kg	TM089		<0.024 M	<0.024 M	<0.024 M	<0.024 M	<0.024 M	<0.024 M
o-Xylene	<0.003 mg/kg	TM089		<0.012 M	<0.012 M	<0.012 M	<0.012 M	<0.012 M	<0.012 M
sum of detected mpo xylene by GC	<0.009 mg/kg	TM089		<0.009	<0.009	<0.009	<0.009	<0.009	<0.009
sum of detected BTEX by GC	<0.024 mg/kg	TM089		<0.024	<0.024	<0.024	0.0262	<0.024	<0.024
Aliphatics >C5-C6	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Aliphatics >C6-C8	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	0.0678
Aliphatics >C8-C10	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	0.0576
Aliphatics >C10-C12	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	0.061
Aliphatics >C12-C16	<0.1 mg/kg	TM173		3.5	3.51	2.31	6.83	3.16	3.19
Aliphatics >C16-C21	<0.1 mg/kg	TM173		12.2	11.3	18.8	19.1	8.31	12
Aliphatics >C21-C35	<0.1 mg/kg	TM173		40.8	37.8	47.4	52	29.9	30.4
Aliphatics >C35-C44	<0.1 mg/kg	TM173		13.2	12.1	18.3	10.9	8.98	4.23
Total Aliphatics >C12-C44	<0.1 mg/kg	TM173		69.7	64.7	86.7	88.9	50.3	49.8
Aromatics >EC5-EC7	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Aromatics >EC7-EC8	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Aromatics >EC8-EC10	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	0.0475
Aromatics >EC10-EC12	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	0.0407
Aromatics >EC12-EC16	<0.1 mg/kg	TM173		10.6	12.6	10.3	59	8.79	23.4
Aromatics >EC16-EC21	<0.1 mg/kg	TM173		80.6	70.8	78.7	475	84.5	226
Aromatics >EC21-EC35	<0.1 mg/kg	TM173		193	165	257	946	234	452
Aromatics >EC35-EC44	<0.1 mg/kg	TM173		51.1	44.1	89.3	219	67.2	102
Aromatics >EC40-EC44	<0.1 mg/kg	TM173		17.4	15.1	32.1	65.2	21.5	32.8
Total Aromatics >EC12-EC44	<0.1 mg/kg	TM173		335	292	436	1700	394	804
Total Aliphatics & Aromatics >C5-C44	<0.1 mg/kg	TM173		405	357	522	1790	445	854

Validated

CERTIFICATE OF ANALYSIS

SDG: 171024-25 **Client Reference:** **Report Number:** 431623
Location: Llanwern **Order Number:** LLA357 **Superseded Report:**

TPH CWG (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	W57-05	W57-06	W57-07	W57-08	W57-09	W57-10
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	23/10/2017	23/10/2017	23/10/2017	23/10/2017	23/10/2017	23/10/2017
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	24/10/2017	24/10/2017	24/10/2017	24/10/2017	24/10/2017	24/10/2017
			SDG Ref	171024-25	171024-25	171024-25	171024-25	171024-25	171024-25
			Lab Sample No.(s)	16416935	16416939	16416945	16416888	16416901	16416908
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		18	8	8	12	29	46
GRO TOT (Moisture Corrected)	<0.044 mg/kg	TM089		0.211 M	<0.176 M	<0.176 M	<0.176 M	<0.176 M	<0.176 M
Methyl tertiary butyl ether (MTBE)	<0.005 mg/kg	TM089		<0.02 #	<0.02 #	<0.02 #	<0.02 #	<0.02 #	<0.02 #
Benzene	<0.01 mg/kg	TM089		<0.04 M	<0.04 M	<0.04 M	<0.04 M	<0.04 M	<0.04 M
Toluene	<0.002 mg/kg	TM089		0.019 M	<0.008 M	<0.008 M	0.0228 M	0.0572 M	0.0185 M
Ethylbenzene	<0.003 mg/kg	TM089		<0.012 M	<0.012 M	<0.012 M	<0.012 M	<0.012 M	<0.012 M
m,p-Xylene	<0.006 mg/kg	TM089		<0.024 M	<0.024 M	<0.024 M	<0.024 M	<0.024 M	<0.024 M
o-Xylene	<0.003 mg/kg	TM089		<0.012 M	<0.012 M	<0.012 M	<0.012 M	<0.012 M	<0.012 M
sum of detected mpo xylene by GC	<0.009 mg/kg	TM089		<0.009	<0.009	<0.009	<0.009	<0.009	<0.009
sum of detected BTEX by GC	<0.024 mg/kg	TM089		<0.024	<0.024	<0.024	<0.024	0.0572	<0.024
Aliphatics >C5-C6	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Aliphatics >C6-C8	<0.01 mg/kg	TM089		0.0464	<0.04	<0.04	<0.04	<0.04	<0.04
Aliphatics >C8-C10	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Aliphatics >C10-C12	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Aliphatics >C12-C16	<0.1 mg/kg	TM173		16.1	15.1	9.91	13.3	1.71	0.354
Aliphatics >C16-C21	<0.1 mg/kg	TM173		29.6	33.5	21.6	22.5	10.9	2.49
Aliphatics >C21-C35	<0.1 mg/kg	TM173		59.4	81.1	58.8	53	27.7	13.5
Aliphatics >C35-C44	<0.1 mg/kg	TM173		8.28	13.7	10.8	7.12	4.85	1.38
Total Aliphatics >C12-C44	<0.1 mg/kg	TM173		113	143	101	95.8	45.1	17.7
Aromatics >EC5-EC7	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Aromatics >EC7-EC8	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	0.0572	<0.04
Aromatics >EC8-EC10	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Aromatics >EC10-EC12	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Aromatics >EC12-EC16	<0.1 mg/kg	TM173		31.1	40.5	20.5	29.3	5.08	1.52
Aromatics >EC16-EC21	<0.1 mg/kg	TM173		266	452	188	357	58.2	21.5
Aromatics >EC21-EC35	<0.1 mg/kg	TM173		647	1080	407	819	209	91.8
Aromatics >EC35-EC44	<0.1 mg/kg	TM173		141	230	97.9	159	50.7	24.2
Aromatics >EC40-EC44	<0.1 mg/kg	TM173		40	64	29.8	43	16.7	7.11
Total Aromatics >EC12-EC44	<0.1 mg/kg	TM173		1080	1800	713	1360	323	139
Total Aliphatics & Aromatics >C5-C44	<0.1 mg/kg	TM173		1200	1950	814	1460	368	157

Table of Results - Appendix

Method No	Reference	Description	Wet/Dry Sample [1]	Surrogate Corrected
PM001		Preparation of Samples for Metals Analysis		
PM024	Modified BS 1377	Soil preparation including homogenisation, moisture screens of soils for Asbestos Containing Material		
SUB (ASB)				
TM024	Method 4500A & B, AWWA/APHA, 20th Ed., 1999	Determination of Exchangeable Ammonium and Ammoniacal Nitrogen as N by titration on solids		
TM062 (S)	National Grid Property Holdings Methods for the Collection & Analysis of Samples from National Grid Sites version 1 Sec 3.9	Determination of Phenols in Soils by HPLC		
TM089	Modified: US EPA Methods 8020 & 602	Determination of Gasoline Range Hydrocarbons (GRO) and BTEX (MTBE) compounds by Headspace GC-FID (C4-C12)		
TM132	In - house Method	ELTRA CS800 Operators Guide		
TM133	BS 1377: Part 3 1990;BS 6068-2.5	Determination of pH in Soil and Water using the GLpH pH Meter		
TM153	Method 4500A,B,C, I, M AWWA/APHA, 20th Ed., 1999	Determination of Total Cyanide, Free (Easily Liberatable) Cyanide and Thiocyanate using the Skalar SANS+ System Segmented Flow Analyser		
TM173	Analysis of Petroleum Hydrocarbons in Environmental Media – Total Petroleum Hydrocarbon Criteria	Determination of Speciated Extractable Petroleum Hydrocarbons in Soils by GC-FID		
TM181	US EPA Method 6010B	Determination of Routine Metals in Soil by iCap 6500 Duo ICP-OES		
TM218	Determination of PAH by GCMS Microwave extraction	The determination of PAH in soil samples by microwave extraction and GC-MS		
TM221	Inductively Coupled Plasma - Atomic Emission Spectroscopy. An Atlas of Spectral Information: Winge, Fassel, Peterson and Floyd	Determination of Acid extractable Sulphate in Soils by IRIS Emission Spectrometer		
TM224	US EPA Method 6010B	Determination of Alkaline Metals by iCap 6500 Duo ICP-OES		
TM243		Mixed Anions In Soils By Kone		

[1] Applies to Solid samples only. DRY indicates samples have been dried at 35°C. NA = not applicable.

Chemical testing (unless subcontracted) performed at ALS Environmental Hawarden (Method codes TM) or ALS Environmental Aberdeen (Method codes S).

CERTIFICATE OF ANALYSIS

SDG: 171024-25 **Client Reference:** **Report Number:** 431623
Location: Llanwern **Order Number:** LLA357 **Superseded Report:**

Test Completion Dates

Lab Sample No(s)	16416881	16416913	16416918	16416922	16416926	16416930	16416935	16416939	16416945	16416888
Customer Sample Ref.	SP2B-29	SP2B-30	W57-01	W57-02	W57-03	W57-04	W57-05	W57-06	W57-07	W57-08
AGS Ref.										
Depth	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
Alkali Metals by iCap-OES (Soil)	31-Oct-2017		31-Oct-2017		31-Oct-2017		31-Oct-2017		31-Oct-2017	
Ammonium Soil by Titration	02-Nov-2017	31-Oct-2017	02-Nov-2017	31-Oct-2017	02-Nov-2017	31-Oct-2017	31-Oct-2017	02-Nov-2017	02-Nov-2017	02-Nov-2017
Anions by Kone (soil)	30-Oct-2017		30-Oct-2017		30-Oct-2017		31-Oct-2017		31-Oct-2017	
Asbestos ID*	02-Nov-2017		02-Nov-2017		02-Nov-2017		02-Nov-2017		02-Nov-2017	
Cyanide Comp/Free/Total/Thiocyanate	02-Nov-2017	02-Nov-2017	02-Nov-2017	01-Nov-2017	01-Nov-2017	30-Oct-2017	01-Nov-2017	31-Oct-2017	30-Oct-2017	30-Oct-2017
EPH CWG (Aliphatic) GC (S)	31-Oct-2017	31-Oct-2017	31-Oct-2017	31-Oct-2017	31-Oct-2017	30-Oct-2017	31-Oct-2017	31-Oct-2017	31-Oct-2017	31-Oct-2017
EPH CWG (Aromatic) GC (S)	31-Oct-2017	31-Oct-2017	31-Oct-2017	31-Oct-2017	31-Oct-2017	30-Oct-2017	31-Oct-2017	01-Nov-2017	31-Oct-2017	01-Nov-2017
GRO by GC-FID (S)	01-Nov-2017	01-Nov-2017	01-Nov-2017	01-Nov-2017	01-Nov-2017	01-Nov-2017	01-Nov-2017	01-Nov-2017	01-Nov-2017	01-Nov-2017
Metals in solid samples by OES	02-Nov-2017	01-Nov-2017	01-Nov-2017	31-Oct-2017	02-Nov-2017	01-Nov-2017	02-Nov-2017	02-Nov-2017	02-Nov-2017	01-Nov-2017
PAH by GCMS	30-Oct-2017	30-Oct-2017	30-Oct-2017	30-Oct-2017	30-Oct-2017	30-Oct-2017	30-Oct-2017	30-Oct-2017	30-Oct-2017	30-Oct-2017
pH	27-Oct-2017	27-Oct-2017	27-Oct-2017	27-Oct-2017	27-Oct-2017	27-Oct-2017	31-Oct-2017	27-Oct-2017	31-Oct-2017	27-Oct-2017
Phenols by HPLC (S)	02-Nov-2017	31-Oct-2017	02-Nov-2017	02-Nov-2017	02-Nov-2017	31-Oct-2017	31-Oct-2017	31-Oct-2017	31-Oct-2017	31-Oct-2017
Sample description	26-Oct-2017	26-Oct-2017	26-Oct-2017	26-Oct-2017	26-Oct-2017	26-Oct-2017	26-Oct-2017	26-Oct-2017	26-Oct-2017	26-Oct-2017
Total Organic Carbon	07-Nov-2017	06-Nov-2017	07-Nov-2017	03-Nov-2017	07-Nov-2017	03-Nov-2017	03-Nov-2017	03-Nov-2017	07-Nov-2017	03-Nov-2017
Total Sulphate	31-Oct-2017		31-Oct-2017		31-Oct-2017		31-Oct-2017		31-Oct-2017	
Total Sulphur	31-Oct-2017		31-Oct-2017		31-Oct-2017		31-Oct-2017		31-Oct-2017	
TPH CWG GC (S)	01-Nov-2017	01-Nov-2017	01-Nov-2017	01-Nov-2017	01-Nov-2017	01-Nov-2017	01-Nov-2017	01-Nov-2017	01-Nov-2017	01-Nov-2017

Lab Sample No(s)	16416901	16416908
Customer Sample Ref.	W57-09	W57-10
AGS Ref.		
Depth	0.00 - 0.00	0.00 - 0.00
Type	Soil/Solid (S)	Soil/Solid (S)
Alkali Metals by iCap-OES (Soil)	31-Oct-2017	
Ammonium Soil by Titration	02-Nov-2017	02-Nov-2017
Anions by Kone (soil)	31-Oct-2017	
Asbestos ID*	02-Nov-2017	
Cyanide Comp/Free/Total/Thiocyanate	31-Oct-2017	30-Oct-2017
EPH CWG (Aliphatic) GC (S)	30-Oct-2017	31-Oct-2017
EPH CWG (Aromatic) GC (S)	30-Oct-2017	31-Oct-2017
GRO by GC-FID (S)	01-Nov-2017	01-Nov-2017
Metals in solid samples by OES	02-Nov-2017	01-Nov-2017
PAH by GCMS	30-Oct-2017	30-Oct-2017
pH	31-Oct-2017	27-Oct-2017
Phenols by HPLC (S)	31-Oct-2017	31-Oct-2017
Sample description	26-Oct-2017	26-Oct-2017
Total Organic Carbon	03-Nov-2017	06-Nov-2017
Total Sulphate	31-Oct-2017	
Total Sulphur	31-Oct-2017	
TPH CWG GC (S)	01-Nov-2017	01-Nov-2017

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www.alsenvironmental.co.uk

Ms Foster
ALS Life Sciences Limited
Units 7 & 8 Hawarden Business Park
Manor Road
Hawarden
Deeside CH5 3US

02 November 2017

Test Report: COV/1457913/2017

Dear Ms Foster

Analysis of your sample(s) submitted on 30 October 2017 is now complete and we have pleasure in enclosing the appropriate test report(s).

An invoice for the analysis carried out will be sent under separate cover.

Should you have any queries regarding this report(s) or any part of our service, please contact Customer Services on +44 (0)24 7642 1213 who will be happy to discuss your requirements.

If you would like to arrange any further analysis, please contact Customer Services. To arrange container delivery or sample collection, please call the Couriers Department directly on 024 7685 6562.

Thank you for using ALS Environmental Ltd and we look forward to receiving your next samples.

Yours Sincerely,

Signed:

Name: P. Patel

Title: Inorganic Team Leader

1314
Certificate No. GB97/10269
Environmental Management Systems
OHS 542058
This communication has been sent to you by ALS Environmental Ltd. Registered in England and Wales. Registration No.02148934. Registered Office: ALS Environmental Limited, Torrington Avenue, Coventry, CV4 9GU.

Report Summary

ANALYSED BY

Ms Carrie Foster
ALS Life Sciences Limited
Units 7 & 8 Hawarden Business Park
Manor Road
Hawarden
Deeside
CH5 3US

UKAS TESTING
1314
0897
4409

Date of Issue: **02 November 2017**

Report Number: **COV/1457913/2017** Issue **1**

This issue replaces all previous issues

Job Description: 2016 Analysis

Job Location: 171024-25

Number of Samples included in this report **6**

Job Received: **30 October 2017**

Number of Test Results included in this report **12**

Analysis Commenced: **01 November 2017**

Signed:

Name: **P. Patel** Date: **02 November 2017**

Title: **Inorganic Team Leader**

ALS Environmental Ltd was not responsible for sampling unless otherwise stated.

Information on the methods of analysis and performance characteristics are available on request.
Opinions and interpretations expressed herein are outside the scope of UKAS accreditation. The results relate only to the items tested.
Tests marked 'Not UKAS Accredited' in this Report/Certificate are not included in the UKAS Accreditation Schedule for our laboratory.

This communication has been sent to you by ALS Environmental Ltd. Registered in England and Wales. Registration No. 02148934. Registered Office: ALS Environmental Limited, Torrington Avenue, Coventry, CV4 9GU.
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Certificate of Analysis

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ALS

Report Number:	**COV/1457913/2017**	Issue	**1**
Laboratory Number:	**16539167**	Sample	**1** of **6**

Sample Source:	**ALS Life Sciences Limited**
Sample Point Description:	
Sample Description:	**16437125 SP2B-29**
Sample Matrix:	**Soil**
Sample Date/Time:	**23 October 2017**
Sample Received:	**30 October 2017**
Analysis Complete:	**01 November 2017**

Test Description	Result	Units	Analysis Date	Accreditation		Method
Description of Sample	Analyst Com	Text	01/11/2017	N	Cov	70
Asbestos Identification	Analyst Com	Text	01/11/2017	Y	Cov	70

Analyst Comments for 16539167: ASBESTOS COMMENTS Asbestos ID: Non Detected, Description of Sample: Soil

This issue replaces all previous issues
Accreditation Codes: Y = UKAS / ISO17025 Accredited, N = Not UKAS / ISO17025 Accredited, M = MCERTS.
Analysed at: Che = Chester(CH4 9EP), Ctd = Coatbridge(ML5 4FR), Cov = Coventry(CV4 9GU), Ott = Otterbourne(SO21 2SW), S = Subcontracted, Trb = Subcontracted to Trowbridge(BA14 0XD), Wak = Wakefield(WF5 9TG).
For Microbiological determinands 0 or ND=Not Detected, For Legionella ND=Not Detected in volume of sample filtered. The LOD for the Legionella analysis will increase where the volume analysed is <1000g (1g is approximately equivalent to 1ml for sample volume analysed).

Signed: P. Patel

Name: **P. Patel** Date: **02 November 2017**

Title: **Inorganic Team Leader**

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ALS

Report Number:	**COV/1457913/2017**	Issue	**1**
Laboratory Number:	**16539168**	Sample	**2** of **6**

Sample Source:	**ALS Life Sciences Limited**
Sample Point Description:	
Sample Description:	**16435080 W57-01**
Sample Matrix:	**Soil**
Sample Date/Time:	**23 October 2017**
Sample Received:	**30 October 2017**
Analysis Complete:	**01 November 2017**

Test Description	Result	Units	Analysis Date	Accreditation		Method
Description of Sample	Analyst Com	Text	01/11/2017	N	Cov	70
Asbestos Identification	Analyst Com	Text	01/11/2017	Y	Cov	70

Analyst Comments for 16539168: ASBESTOS COMMENTS Asbestos ID: Non Detected, Description of Sample: Soil

This issue replaces all previous issues
Accreditation Codes: Y = UKAS / ISO17025 Accredited, N = Not UKAS / ISO17025 Accredited, M = MCERTS.
Analysed at: Che = Chester(CH4 9EP), Ctd = Coatbridge(ML5 4FR), Cov = Coventry(CV4 9GU), Ott = Otterbourne(SO21 2SW), S = Subcontracted, Trb = Subcontracted to Trowbridge(BA14 0XD), Wak = Wakefield(WF5 9TG).
For Microbiological determinands 0 or ND=Not Detected, For Legionella ND=Not Detected in volume of sample filtered. The LOD for the Legionella analysis will increase where the volume analysed is <1000g (1g is approximately equivalent to 1ml for sample volume analysed).

Signed: P. Patel

Name: **P. Patel** Date: **02 November 2017**

Title: **Inorganic Team Leader**

Certificate of Analysis

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ALS

Report Number:	**COV/1457913/2017**	Issue	**1**
Laboratory Number:	**16539169**	Sample	**3** of **6**

Sample Source:	**ALS Life Sciences Limited**
Sample Point Description:	
Sample Description:	**16435078 W57-03**
Sample Matrix:	**Soil**
Sample Date/Time:	**23 October 2017**
Sample Received:	**30 October 2017**
Analysis Complete:	**01 November 2017**

Test Description	Result	Units	Analysis Date	Accreditation		Method
Description of Sample	Analyst Com	Text	01/11/2017	N	Cov	70
Asbestos Identification	Analyst Com	Text	01/11/2017	Y	Cov	70

Analyst Comments for 16539169: ASBESTOS COMMENTS Asbestos ID: Non Detected, Description of Sample: Soil

This issue replaces all previous issues
Accreditation Codes: Y = UKAS / ISO17025 Accredited, N = Not UKAS / ISO17025 Accredited, M = MCERTS.
Analysed at: Che = Chester(CH4 9EP), Ctd = Coatbridge(ML5 4FR), Cov = Coventry(CV4 9GU), Ott = Otterbourne(SO21 2SW), S = Subcontracted, Trb = Subcontracted to Trowbridge(BA14 0XD), Wak = Wakefield(WF5 9TG).
For Microbiological determinands 0 or ND=Not Detected, For Legionella ND=Not Detected in volume of sample filtered. The LOD for the Legionella analysis will increase where the volume analysed is <1000g (1g is approximately equivalent to 1ml for sample volume analysed).

Signed: P. Patel

Name: **P. Patel** Date: **02 November 2017**

Title: **Inorganic Team Leader**

Certificate of Analysis

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ALS

Report Number:	**COV/1457913/2017**	Issue	**1**
Laboratory Number:	**16539170**	Sample	**4** of **6**

Sample Source:	**ALS Life Sciences Limited**
Sample Point Description:	
Sample Description:	**16437138 W57-05**
Sample Matrix:	**Soil**
Sample Date/Time:	**23 October 2017**
Sample Received:	**30 October 2017**
Analysis Complete:	**01 November 2017**

Test Description	Result	Units	Analysis Date	Accreditation	Method
Description of Sample	Analyst Com	Text	01/11/2017	N Cov	70
Asbestos Identification	Analyst Com	Text	01/11/2017	Y Cov	70

Analyst Comments for 16539170: ASBESTOS COMMENTS Asbestos ID: Non Detected, Description of Sample: Soil

This issue replaces all previous issues
Accreditation Codes: Y = UKAS / ISO17025 Accredited, N = Not UKAS / ISO17025 Accredited, M = MCERTS.
Analysed at: Che = Chester(CH4 9EP), Ctd = Coatbridge(ML5 4FR), Cov = Coventry(CV4 9GU), Ott = Otterbourne(SO21 2SW), S = Subcontracted, Trb = Subcontracted to Trowbridge(BA14 0XD), Wak = Wakefield(WF5 9TG).
For Microbiological determinands 0 or ND=Not Detected, For Legionella ND=Not Detected in volume of sample filtered. The LOD for the Legionella analysis will increase where the volume analysed is <1000g (1g is approximately equivalent to 1ml for sample volume analysed).

Signed: P. Patel

Name: **P. Patel** Date: **02 November 2017**

Title: **Inorganic Team Leader**

Certificate of Analysis

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Report Number:	**COV/1457913/2017**	Issue	**1**
Laboratory Number:	**16539171**	Sample	**5** of **6**

Sample Source:	**ALS Life Sciences Limited**
Sample Point Description:	
Sample Description:	**16436822 W57-07**
Sample Matrix:	**Soil**
Sample Date/Time:	**23 October 2017**
Sample Received:	**30 October 2017**
Analysis Complete:	**01 November 2017**

Test Description	Result	Units	Analysis Date	Accreditation		Method
Description of Sample	Analyst Com	Text	01/11/2017	N	Cov	70
Asbestos Identification	Analyst Com	Text	01/11/2017	Y	Cov	70

Analyst Comments for 16539171: ASBESTOS COMMENTS Asbestos ID: Non Detected, Description of Sample: Soil

This issue replaces all previous issues
Accreditation Codes: Y = UKAS / ISO17025 Accredited, N = Not UKAS / ISO17025 Accredited, M = MCERTS.
Analysed at: Che = Chester(CH4 9EP), Ctd = Coatbridge(ML5 4FR), Cov = Coventry(CV4 9GU), Ott = Otterbourne(SO21 2SW), S = Subcontracted, Trb = Subcontracted to Trowbridge(BA14 0XD), Wak = Wakefield(WF5 9TG).
For Microbiological determinands 0 or ND=Not Detected, For Legionella ND=Not Detected in volume of sample filtered. The LOD for the Legionella analysis will increase where the volume analysed is <1000g (1g is approximately equivalent to 1ml for sample volume analysed).

Signed: P. Patel

Name: **P. Patel** Date: **02 November 2017**

Title: **Inorganic Team Leader**

Certificate of Analysis

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ALS

Report Number:	**COV/1457913/2017**	Issue	**1**
Laboratory Number:	**16539172**	Sample	**6** of **6**

Sample Source:	**ALS Life Sciences Limited**
Sample Point Description:	
Sample Description:	**16436826 W57-09**
Sample Matrix:	**Soil**
Sample Date/Time:	**23 October 2017**
Sample Received:	**30 October 2017**
Analysis Complete:	**01 November 2017**

Test Description	Result	Units	Analysis Date	Accreditation		Method
Description of Sample	Analyst Com	Text	01/11/2017	N	Cov	70
Asbestos Identification	Analyst Com	Text	01/11/2017	Y	Cov	70

Analyst Comments for 16539172: ASBESTOS COMMENTS Asbestos ID: Non Detected, Description of Sample: Soil

This issue replaces all previous issues
Accreditation Codes: Y = UKAS / ISO17025 Accredited, N = Not UKAS / ISO17025 Accredited, M = MCERTS.
Analysed at: Che = Chester(CH4 9EP), Ctd = Coatbridge(ML5 4FR), Cov = Coventry(CV4 9GU), Ott = Otterbourne(SO21 2SW), S = Subcontracted, Trb = Subcontracted to Trowbridge(BA14 0XD), Wak = Wakefield(WF5 9TG).
For Microbiological determinands 0 or ND=Not Detected, For Legionella ND=Not Detected in volume of sample filtered. The LOD for the Legionella analysis will increase where the volume analysed is <1000g (1g is approximately equivalent to 1ml for sample volume analysed).

Signed: P. Patel

Name: **P. Patel** Date: **02 November 2017**

Title: **Inorganic Team Leader**

ANALYST COMMENTS FOR REPORT COV/1457913/2017

Issue 1 This issue replaces all previous issues

Date of Issue: **02 November 2017**

Sample No	Analysis Comments
16539167	ASBESTOS COMMENTS Asbestos ID: Non Detected, Description of Sample: Soil
16539168	ASBESTOS COMMENTS Asbestos ID: Non Detected, Description of Sample: Soil
16539169	ASBESTOS COMMENTS Asbestos ID: Non Detected, Description of Sample: Soil
16539170	ASBESTOS COMMENTS Asbestos ID: Non Detected, Description of Sample: Soil
16539171	ASBESTOS COMMENTS Asbestos ID: Non Detected, Description of Sample: Soil
16539172	ASBESTOS COMMENTS Asbestos ID: Non Detected, Description of Sample: Soil

Signed:

Name: **P. Patel** Date: **02 November 2017**

Title: **Inorganic Team Leader**

DETERMINAND COMMENTS FOR REPORT COV/1457913/2017

ISSUE 1

This issue replaces all previous issues

Date of Issue: 02 November 2017

Sample No	Description	Determinand	Comments
16539167	16437125 SP2B-29	Asbestos Identification	{/*}Non Detected{*/}
16539167	16437125 SP2B-29	Description of Sample	{/*}Soil{*/}
16539168	16435080 W57-01	Asbestos Identification	{/*}Non Detected{*/}
16539168	16435080 W57-01	Description of Sample	{/*}Soil{*/}
16539169	16435078 W57-03	Asbestos Identification	{/*}Non Detected{*/}
16539169	16435078 W57-03	Description of Sample	{/*}Soil{*/}
16539170	16437138 W57-05	Asbestos Identification	{/*}Non Detected{*/}
16539170	16437138 W57-05	Description of Sample	{/*}Soil{*/}
16539171	16436822 W57-07	Asbestos Identification	{/*}Non Detected{*/}
16539171	16436822 W57-07	Description of Sample	{/*}Soil{*/}
16539172	16436826 W57-09	Asbestos Identification	{/*}Non Detected{*/}
16539172	16436826 W57-09	Description of Sample	{/*}Soil{*/}

Signed:

Name: **P. Patel** Date: **02 November 2017**

Title: **Inorganic Team Leader**

Appendix

General

1. Results are expressed on a dry weight basis (dried at 35ºC) for all soil analyses except for the following: NRA and CEN Leach tests, flash point LOI, pH, ammonium as NH4 by the BRE method, VOC TICs and SVOC TICs.

2. Samples will be run in duplicate upon request, but an additional charge may be incurred

3. If sufficient sample is received a sub sample will be retained free of charge for 30 days after analysis is completed (e-mailed) for all sample types unless the sample is destroyed on testing. The prepared soil sub sample that is analysed for asbestos will be retained for a period of 6 months after the analysis date. All bulk samples will be retained for a period of 6 months after the analysis date. All samples received and not scheduled will be disposed of one month after the date of receipt unless we are instructed to the contrary. Once the initial period has expired, a storage charge will be applied for each month or part thereof until the client cancels the request for sample storage. ALS reserve the right to charge for samples received and stored but not analysed.

4. With respect to turnaround, we will always endeavour to meet client requirements wherever possible, but turnaround times cannot be absolutely guaranteed due to so many variables beyond our control.

5. We take responsibility for any test performed by sub-contractors (marked with an asterisk). We endeavour to use UKAS/MCERTS Accredited Laboratories, who either complete a quality questionnaire or are audited by ourselves. For some determinands there are no UKAS/MCERTS Accredited Laboratories, in this instance a laboratory with a known track record will be utilised.

6. When requested, the individual sub sample scheduled will be analysed in house for the presence of asbestos fibres and asbestos containing material by our documented in house method TM048 based on HSG 248 (2005), which is accredited to ISO17025. If a specific asbestos fibre type is not found this will be reported as “Not detected”. If no asbestos fibre types are found all will be reported as “Not detected” and the sub sample analysed deemed to be clear of asbestos. If an asbestos fibre type is found it will be reported as detected (for each fibre type found). Testing can be carried out on asbestos positive samples, but, due to Health and Safety considerations, may be replaced by alternative tests or reported as No Determination Possible (NDP). The quantity of asbestos present is not determined unless specifically requested.

7. If no separate volatile sample is supplied by the client, or if a headspace or sediment is present in the volatile sample, the integrity of the data may be compromised. This will be flagged up as an invalid VOC on the test schedule and the result marked as deviating on the test certificate.

8. If appropriate preserved bottles are not received preservation will take place on receipt. However, the integrity of the data may be compromised.

9. NDP - No determination possible due to insufficient/unsuitable sample.

10. Metals in water are performed on a filtered sample, and therefore represent dissolved metals - total metals must be requested separately.

11. Results relate only to the items tested.

12. LoDs (Limit of Detection) for wet tests reported on a dry weight basis are not corrected for moisture content.

13. **Surrogate recoveries** - Surrogates are added to your sample to monitor recovery of the test requested. A % recovery is reported, results are not corrected for the recovery measured. Typical recoveries for organics tests are 70-130%, they are generally wider for volatiles analysis, 50-150%. Recoveries in soils are affected by organic rich or clay rich matrices. Waters can be affected by remediation fluids or high amounts of sediment. Test results are only ever reported if all of the associated quality checks pass; it is assumed that all recoveries outside of the values above are due to matrix affect.

14. **Product analyses** - Organic analyses on products can only be semi-quantitative due to the matrix effects and high dilution factors
employed.

15. Phenols monohydric by HPLC include phenol, cresols (2-Methylphenol, 3-Methylphenol and 4-Methylphenol) and Xylenols (2,3 Dimethylphenol, 2,4 Dimethylphenol, 2,5 Dimethylphenol, 2,6 Dimethylphenol, 3,4 Dimethyphenol, 3,5 Dimethylphenol).

16. Total of 5 speciated phenols by HPLC includes Phenol, 2,3,5-Trimethyl Phenol, 2-Isopropylphenol, Cresols and Xylenols (as detailed in 15).

17. Stones/debris are not routinely removed. We always endeavour to take a representative sub sample from the received sample.

18. In certain circumstances the method detection limit may be elevated due to the sample being outside the calibration range. Other factors that may contribute to this include possible interferences. In both cases the sample would be diluted which would cause the method detection limit to be raised.

19. Mercury results quoted on soils will not include volatile mercury as the analysis is performed on a dried and crushed sample.

20. For leachate preparations other than Zero Headspace Extraction (ZHE) volatile loss may occur.

21. For the BSEN 12457-3 two batch process to allow the cumulative release to be calculated, the volume of the leachate produced is measured and filtered for all tests. We therefore cannot carry out any unfiltered analysis. The tests affected include volatiles GCFID/GCMS and all subcontracted analysis.

22. We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample. Other coarse granular material such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

23. Analysis and identification of specific compounds using GCFID is by retention time only, and we routinely calibrate and quantify for benzene, toluene, ethylbenzenes and xylenes (BTEX). For total volatiles in the C5-C12 range, the total area of the chromatogram is integrated and expressed as ug/kg or ug/l. Although this analysis is commonly used for the quantification of gasoline range organics (GRO), the system will also detect other compounds such as chlorinated solvents, and this may lead to a falsely high result with respect to hydrocarbons only. It is not possible to specifically identify these non-hydrocarbons, as standards are not routinely run for any other compounds, and for more definitive identification, volatiles by GCMS should be utilised.

24. **Tentatively Identified Compounds (TICs)** are non-target peaks in VOC and SVOC analysis. All non-target peaks detected with a concentration above the LoD are subjecte to a mass spectral library search. Non-target peaks with a library search confidence of >75% are reported based on the best mass spectral library match. When a non-target peak with a library search confidence of <75% is detected it is reported as “mixed hydrocarbons”. Non-target compounds identified from the scan data are semi-quantified relative to one of the deuterated internal standards, under the same chromatographic conditions as the target compounds. This result is reported as a semi-quantitative value and reported as Tentatively Identified Compounds (TICs). TICs are outside the scope of UKAS accreditation and are not moisture corrected.

Sample Deviations

If a sample is classed as deviated then the associated results may be compromised.

1	**Container with Headspace provided for volatiles analysis**
2	**Incorrect container received**
3	**Deviation from method**
4	**Holding time exceeded before sample received**
5	**Samples exceeded holding time before presevation was performed**
§	**Sampled on date not provided**
♦	**Sample holding time exceeded in laboratory**
@	**Sample holding time exceeded due to sampled on date**
&	**Sample Holding Time exceeded - Late arrival of instructions.**

Asbestos

Identification of Asbestos in Bulk Materials & Soils

The results for identification of asbestos in bulk materials are obtained from supplied bulk materials which have been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

The results for identification of asbestos in soils are obtained from a homogenised sub sample which has been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

Asbestos Type	Common Name
Chrysotile	White Asbestos
Amosite	Brown Asbestos
Crocidolite	Blue Asbestos
Fibrous Actinolite	-
Fibrous Anthophyllite	-
Fibrous Tremolite	-

Visual Estimation Of Fibre Content

Estimation of fibre content is not permitted as part of our UKAS accredited test other than: - Trace - Where only one or two asbestos fibres were identified.

Further guidance on typical asbestos fibre content of manufactured products can be found in HSG 264.

The identification of asbestos containing materials and soils falls within our schedule of tests for which we hold UKAS accreditation, however opinions, interpretations and all other information contained in the report are outside the scope of UKAS accreditation.

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Atkins Global Ltd
Project Jonah site office
Llan Coed House
Suite 24
Coed Darcy
Llandarcy
SA10 6HJ

Attention: John Fitzgerald

CERTIFICATE OF ANALYSIS

Date:	27 November 2017
Customer:	H_ATKINS_LDC
Sample Delivery Group (SDG):	171026-67
Your Reference:	
Location:	Llanwern
Report No:	434280

We received 30 samples on Thursday October 26, 2017 and 30 of these samples were scheduled for analysis which was completed on Thursday November 16, 2017. Accredited laboratory tests are defined within the report, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation.

Should this report require incorporation into client reports, it must be used in its entirety and not simply with the data sections alone.

Chemical testing (unless subcontracted) performed at ALS Environmental Hawarden (Method codes TM) or ALS Environmental Aberdeen (Method codes S).

Approved By:

Sonia McWhan

Operations Manager

ALS Life Sciences Limited. Registered Office: Units 7 & 8 Hawarden Business Park, Manor Road, Hawarden, Deeside, CH5 3US. Registered in England and Wales No. 4057291.

CERTIFICATE OF ANALYSIS

SDG:	171026-67	**Client Reference:**		**Report Number:**	434280
Location:	Llanwern	**Order Number:**	LLA359	**Superseded Report:**	

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
16433154	SP2B-31		0.00 - 0.00	25/10/2017
16433207	SP2B-32		0.00 - 0.00	25/10/2017
16433282	SP2B-33		0.00 - 0.00	25/10/2017
16433301	SP2B-34		0.00 - 0.00	25/10/2017
16433305	SP2B-35		0.00 - 0.00	25/10/2017
16433310	SP2B-36		0.00 - 0.00	25/10/2017
16433315	SP2B-37		0.00 - 0.00	25/10/2017
16433323	SP2B-38		0.00 - 0.00	25/10/2017
16433330	SP2B-39		0.00 - 0.00	25/10/2017
16433159	SP2B-40		0.00 - 0.00	25/10/2017
16433164	SP2B-41		0.00 - 0.00	25/10/2017
16433170	SP2B-42		0.00 - 0.00	25/10/2017
16433174	SP2B-43		0.00 - 0.00	25/10/2017
16433179	SP2B-44		0.00 - 0.00	25/10/2017
16433185	SP2B-45		0.00 - 0.00	25/10/2017
16433189	SP2B-46		0.00 - 0.00	25/10/2017
16433193	SP2B-47		0.00 - 0.00	25/10/2017
16433197	SP2B-48		0.00 - 0.00	25/10/2017
16433203	SP2B-49		0.00 - 0.00	25/10/2017
16433212	SP2B-50		0.00 - 0.00	25/10/2017
16433219	SP2B-51		0.00 - 0.00	25/10/2017
16433225	SP2B-52		0.00 - 0.00	25/10/2017
16433229	SP2B-53		0.00 - 0.00	25/10/2017
16433233	SP2B-54		0.00 - 0.00	25/10/2017
16433237	SP2B-55		0.00 - 0.00	25/10/2017
16433243	SP2B-56		0.00 - 0.00	25/10/2017
16433251	SP2B-57		0.00 - 0.00	25/10/2017
16433260	SP2B-58		0.00 - 0.00	25/10/2017
16433270	SP2B-59		0.00 - 0.00	25/10/2017
16433290	SP2B-60		0.00 - 0.00	25/10/2017

Maximum Sample/Coolbox Temperature (°C) : **10.0**

ISO5667-3 Water quality - Sampling - Part3 -
During Transportation samples shall be stored in a cooling device capable of maintaining a temperature of (5±3)°C.

ALS have data which show that a cool box with 4 frozen icepacks is capable of maintaining pre-chilled samples at a temperature of (5±3)°C for a period of up to 24hrs.

Only received samples which have had analysis scheduled will be shown on the following pages.

Validated

CERTIFICATE OF ANALYSIS

SDG:	171026-67	**Client Reference:**		**Report Number:**	434280
Location:	Llanwern	**Order Number:**	LLA359	**Superseded Report:**	

Results Legend

X Test

N No Determination Possible

Sample Types -
S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

Lab Sample No(s)			16433154			16433207			16433282			16433301			16433305			16433310			16433315	16433323
Customer Sample Reference			SP2B-31			SP2B-32			SP2B-33			SP2B-34			SP2B-35			SP2B-36			SP2B-37	SP2B-38
AGS Reference																						
Depth (m)			0.00 - 0.00			0.00 - 0.00			0.00 - 0.00			0.00 - 0.00			0.00 - 0.00			0.00 - 0.00			0.00 - 0.00	0.00 - 0.00
Container			250g Amber Jar (ALE210)	400g Tub (ALE214)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	400g Tub (ALE214)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	400g Tub (ALE214)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	400g Tub (ALE214)	60g VOC (ALE215)	250g Amber Jar (ALE210)
Sample Type			S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
Alkali Metals by iCap-OES (Soil)	All	NDPs: 0 Tests: 15	X					X					X					X				
Ammonium Soil by Titration	All	NDPs: 0 Tests: 30	X			X		X			X		X			X		X				X
Anions by Kone (soil)	All	NDPs: 0 Tests: 15	X					X					X					X				
Asbestos ID*	All	NDPs: 0 Tests: 15		X					X					X					X			
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 30	X			X		X			X		X			X		X				X
EPH CWG (Aliphatic) GC (S)	All	NDPs: 0 Tests: 30	X			X		X			X		X			X		X				X
EPH CWG (Aromatic) GC (S)	All	NDPs: 0 Tests: 30	X			X		X			X		X			X		X				X
GRO by GC-FID (S)	All	NDPs: 0 Tests: 30			X		X			X		X			X		X			X		
Metals in solid samples by OES	All	NDPs: 0 Tests: 30	X			X		X			X		X			X		X				X
PAH by GCMS	All	NDPs: 0 Tests: 30	X			X		X			X		X			X		X				X
pH	All	NDPs: 0 Tests: 30	X			X		X			X		X			X		X				X
Phenols by HPLC (S)	All	NDPs: 0 Tests: 30	X			X		X			X		X			X		X				X
Sample description	All	NDPs: 0 Tests: 30	X			X		X			X		X			X		X				X
Total Organic Carbon	All	NDPs: 0 Tests: 30	X			X		X			X		X			X		X				X
Total Sulphate	All	NDPs: 0 Tests: 15	X					X					X					X				

16433189	SP2B-46		0.00 - 0.00	60g VOC (ALE215)	S									X									
				250g Amber Jar (ALE210)	S		X			X	X	X		X	X	X	X	X	X				
16433185	SP2B-45		0.00 - 0.00	60g VOC (ALE215)	S									X									
				400g Tub (ALE214)	S				X															
				250g Amber Jar (ALE210)	S	X	X	X		X	X	X		X	X	X	X	X	X	X			
16433179	SP2B-44		0.00 - 0.00	60g VOC (ALE215)	S									X									
				250g Amber Jar (ALE210)	S		X			X	X	X		X	X	X	X	X	X				
16433174	SP2B-43		0.00 - 0.00	60g VOC (ALE215)	S									X									
				400g Tub (ALE214)	S				X															
				250g Amber Jar (ALE210)	S	X	X	X		X	X	X		X	X	X	X	X	X	X			
16433170	SP2B-42		0.00 - 0.00	60g VOC (ALE215)	S									X									
				250g Amber Jar (ALE210)	S		X			X	X	X		X	X	X	X	X	X				
16433164	SP2B-41		0.00 - 0.00	60g VOC (ALE215)	S									X									
				400g Tub (ALE214)	S				X															
				250g Amber Jar (ALE210)	S	X	X	X		X	X	X		X	X	X	X	X	X	X			
16433159	SP2B-40		0.00 - 0.00	60g VOC (ALE215)	S									X									
				250g Amber Jar (ALE210)	S		X			X	X	X		X	X	X	X	X	X				
16433330	SP2B-39		0.00 - 0.00	60g VOC (ALE215)	S									X									
				400g Tub (ALE214)	S				X															
				250g Amber Jar (ALE210)	S	X	X	X		X	X	X		X	X	X	X	X	X	X			
16433323	SP2B-38		0.00 - 0.00	60g VOC (ALE215)	S									X									

Validated

CERTIFICATE OF ANALYSIS

SDG:	171026-67	**Client Reference:**		**Report Number:**	434280
Location:	Llanwern	**Order Number:**	LLA359	**Superseded Report:**	

Results Legend

X **Test**

N **No Determination Possible**

Sample Types -
S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

Lab Sample No(s)				16433154			16433207			16433282			16433301			16433305			16433310			16433315			16433323
Customer Sample Reference				SP2B-31			SP2B-32			SP2B-33			SP2B-34			SP2B-35			SP2B-36			SP2B-37			SP2B-38
AGS Reference																									
Depth (m)				0.00 - 0.00			0.00 - 0.00			0.00 - 0.00			0.00 - 0.00			0.00 - 0.00			0.00 - 0.00			0.00 - 0.00			0.00 - 0.00
Container				250g Amber Jar (ALE210)	400g Tub (ALE214)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)		250g Amber Jar (ALE210)	400g Tub (ALE214)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)		250g Amber Jar (ALE210)	400g Tub (ALE214)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)		250g Amber Jar (ALE210)	400g Tub (ALE214)	60g VOC (ALE215)	250g Amber Jar (ALE210)
Sample Type				S	S	S	S	S		S	S	S	S	S		S	S	S	S	S		S	S	S	S
Total Sulphur	All	NDPs: 0 Tests: 15		X						X						X						X			
TPH CWG GC (S)	All	NDPs: 0 Tests: 30		X			X			X			X			X			X			X			X

16433189	SP2B-46		0.00 - 0.00	60g VOC (ALE215)	S				
				250g Amber Jar (ALE210)	S				X
16433185	SP2B-45		0.00 - 0.00	60g VOC (ALE215)	S				
				400g Tub (ALE214)	S				
				250g Amber Jar (ALE210)	S		X		X
16433179	SP2B-44		0.00 - 0.00	60g VOC (ALE215)	S				
				250g Amber Jar (ALE210)	S				X
16433174	SP2B-43		0.00 - 0.00	60g VOC (ALE215)	S				
				400g Tub (ALE214)	S				
				250g Amber Jar (ALE210)	S		X		X
16433170	SP2B-42		0.00 - 0.00	60g VOC (ALE215)	S				
				250g Amber Jar (ALE210)	S				X
16433164	SP2B-41		0.00 - 0.00	60g VOC (ALE215)	S				
				400g Tub (ALE214)	S				
				250g Amber Jar (ALE210)	S		X		X
16433159	SP2B-40		0.00 - 0.00	60g VOC (ALE215)	S				
				250g Amber Jar (ALE210)	S				X
16433330	SP2B-39		0.00 - 0.00	60g VOC (ALE215)	S				
				400g Tub (ALE214)	S				
				250g Amber Jar (ALE210)	S		X		X
16433323	SP2B-38		0.00 - 0.00	60g VOC (ALE215)	S				

CERTIFICATE OF ANALYSIS

SDG:	171026-67	**Client Reference:**		**Report Number:**	434280
Location:	Llanwern	**Order Number:**	LLA359	**Superseded Report:**	

Results Legend

X Test

N No Determination Possible

Sample Types -

- S - Soil/Solid
- UNS - Unspecified Solid
- GW - Ground Water
- SW - Surface Water
- LE - Land Leachate
- PL - Prepared Leachate
- PR - Process Water
- SA - Saline Water
- TE - Trade Effluent
- TS - Treated Sewage
- US - Untreated Sewage
- RE - Recreational Water
- DW - Drinking Water Non-regulatory
- UNL - Unspecified Liquid
- SL - Sludge
- G - Gas
- OTH - Other

Lab Sample No(s)			16433193			16433197		16433203			16433212		16433219			16433225		16433229			16433233
Customer Sample Reference			SP2B-47			SP2B-48		SP2B-49			SP2B-50		SP2B-51			SP2B-52		SP2B-53			SP2B-54
AGS Reference																					
Depth (m)			0.00 - 0.00			0.00 - 0.00		0.00 - 0.00			0.00 - 0.00		0.00 - 0.00			0.00 - 0.00		0.00 - 0.00			0.00 - 0.00
Container			250g Amber Jar (ALE210)	400g Tub (ALE214)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	400g Tub (ALE214)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	400g Tub (ALE214)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	400g Tub (ALE214)	60g VOC (ALE215)	250g Amber Jar (ALE210)
Sample Type			S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
Alkali Metals by iCap-OES (Soil)	All	NDPs: 0 Tests: 15	X					X					X					X			
Ammonium Soil by Titration	All	NDPs: 0 Tests: 30	X			X		X			X		X			X		X			X
Anions by Kone (soil)	All	NDPs: 0 Tests: 15	X					X					X					X			
Asbestos ID*	All	NDPs: 0 Tests: 15		X					X					X					X		
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 30	X			X		X			X		X			X		X			X
EPH CWG (Aliphatic) GC (S)	All	NDPs: 0 Tests: 30	X			X		X			X		X			X		X			X
EPH CWG (Aromatic) GC (S)	All	NDPs: 0 Tests: 30	X			X		X			X		X			X		X			X
GRO by GC-FID (S)	All	NDPs: 0 Tests: 30			X		X			X		X			X		X			X	
Metals in solid samples by OES	All	NDPs: 0 Tests: 30	X			X		X			X		X			X		X			X
PAH by GCMS	All	NDPs: 0 Tests: 30	X			X		X			X		X			X		X			X
pH	All	NDPs: 0 Tests: 30	X			X		X			X		X			X		X			X
Phenols by HPLC (S)	All	NDPs: 0 Tests: 30	X			X		X			X		X			X		X			X
Sample description	All	NDPs: 0 Tests: 30	X			X		X			X		X			X		X			X
Total Organic Carbon	All	NDPs: 0 Tests: 30	X			X		X			X		X			X		X			X
Total Sulphate	All	NDPs: 0 Tests: 15	X					X					X					X			

16433290	SP2B-60		0.00 - 0.00	60g VOC (ALE215)	S	
				250g Amber Jar (ALE210)	S	
16433270	SP2B-59		0.00 - 0.00	60g VOC (ALE215)	S	
				400g Tub (ALE214)	S	
				250g Amber Jar (ALE210)	S	
16433260	SP2B-58		0.00 - 0.00	60g VOC (ALE215)	S	
				250g Amber Jar (ALE210)	S	
16433251	SP2B-57		0.00 - 0.00	60g VOC (ALE215)	S	
				400g Tub (ALE214)	S	
				250g Amber Jar (ALE210)	S	
16433243	SP2B-56		0.00 - 0.00	60g VOC (ALE215)	S	
				250g Amber Jar (ALE210)	S	
16433237	SP2B-55		0.00 - 0.00	60g VOC (ALE215)	S	
				400g Tub (ALE214)	S	
				250g Amber Jar (ALE210)	S	
16433233	SP2B-54		0.00 - 0.00	60g VOC (ALE215)	S	

Validated

CERTIFICATE OF ANALYSIS

SDG:	171026-67	**Client Reference:**		**Report Number:**	434280
Location:	Llanwern	**Order Number:**	LLA359	**Superseded Report:**	

Results Legend

X **Test**

N **No Determination Possible**

Sample Types -
S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

Lab Sample No(s)				16433193			16433197			16433203			16433212			16433219			16433225			16433229			16433233
Customer Sample Reference				SP2B-47			SP2B-48			SP2B-49			SP2B-50			SP2B-51			SP2B-52			SP2B-53			SP2B-54
AGS Reference																										
Depth (m)				0.00 - 0.00			0.00 - 0.00			0.00 - 0.00			0.00 - 0.00			0.00 - 0.00			0.00 - 0.00			0.00 - 0.00			0.00 - 0.00
Container				250g Amber Jar (ALE210)	400g Tub (ALE214)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	400g Tub (ALE214)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	400g Tub (ALE214)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	400g Tub (ALE214)	60g VOC (ALE215)	250g Amber Jar (ALE210)			
Sample Type				S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
Total Sulphur	All	NDPs: 0 Tests: 15		X					X					X							X					
TPH CWG GC (S)	All	NDPs: 0 Tests: 30		X			X		X			X		X			X				X				X	

16433290	SP2B-60		0.00 - 0.00	60g VOC (ALE215)	S				
				250g Amber Jar (ALE210)	S				X
16433270	SP2B-59		0.00 - 0.00	60g VOC (ALE215)	S				
				400g Tub (ALE214)	S				
				250g Amber Jar (ALE210)	S		X		X
16433260	SP2B-58		0.00 - 0.00	60g VOC (ALE215)	S				
				250g Amber Jar (ALE210)	S				X
16433251	SP2B-57		0.00 - 0.00	60g VOC (ALE215)	S				
				400g Tub (ALE214)	S				
				250g Amber Jar (ALE210)	S		X		X
16433243	SP2B-56		0.00 - 0.00	60g VOC (ALE215)	S				
				250g Amber Jar (ALE210)	S				X
16433237	SP2B-55		0.00 - 0.00	60g VOC (ALE215)	S				
				400g Tub (ALE214)	S				
				250g Amber Jar (ALE210)	S		X		X
16433233	SP2B-54		0.00 - 0.00	60g VOC (ALE215)	S				

CERTIFICATE OF ANALYSIS

SDG:	171026-67	**Client Reference:**		**Report Number:**	434280
Location:	Llanwern	**Order Number:**	LLA359	**Superseded Report:**	

Sample Descriptions

Grain Sizes

very fine	<0.063mm	fine	0.063mm - 0.1mm	medium	0.1mm - 2mm	coarse	2mm - 10mm	very coarse	>10mm

Lab Sample No(s)	Customer Sample Ref.	Depth (m)	Colour	Description	Inclusions	Inclusions 2
16433154	SP2B-31	0.00 - 0.00	Dark Brown	Sandy Clay Loam	Stones	Brick
16433207	SP2B-32	0.00 - 0.00	Dark Brown	Sandy Clay Loam	Stones	None
16433282	SP2B-33	0.00 - 0.00	Black	Sandy Loam	Stones	None
16433301	SP2B-34	0.00 - 0.00	Dark Brown	Sandy Loam	Stones	N/A
16433305	SP2B-35	0.00 - 0.00	Black	Sandy Clay Loam	Stones	None
16433310	SP2B-36	0.00 - 0.00	Dark Brown	Sandy Clay Loam	Stones	None
16433315	SP2B-37	0.00 - 0.00	Dark Brown	Sandy Clay Loam	Stones	Brick
16433323	SP2B-38	0.00 - 0.00	Dark Brown	Sandy Loam	Stones	None
16433330	SP2B-39	0.00 - 0.00	Dark Brown	Sandy Clay Loam	Stones	Crushed Brick
16433159	SP2B-40	0.00 - 0.00	Dark Brown	Sandy Clay Loam	Stones	None
16433164	SP2B-41	0.00 - 0.00	Dark Brown	Sandy Clay Loam	Stones	None
16433170	SP2B-42	0.00 - 0.00	Dark Brown	Sandy Clay Loam	Stones	None
16433174	SP2B-43	0.00 - 0.00	Dark Brown	Sandy Clay Loam	Stones	None
16433179	SP2B-44	0.00 - 0.00	Dark Brown	Sandy Clay Loam	Stones	N/A
16433185	SP2B-45	0.00 - 0.00	Dark Brown	Sandy Clay Loam	Stones	N/A
16433189	SP2B-46	0.00 - 0.00	Dark Brown	Sandy Clay Loam	Stones	N/A
16433193	SP2B-47	0.00 - 0.00	Dark Brown	Sandy Clay Loam	Stones	None
16433197	SP2B-48	0.00 - 0.00	Dark Brown	Sandy Clay Loam	Stones	Crushed Brick
16433203	SP2B-49	0.00 - 0.00	Dark Brown	Sandy Loam	Stones	Vegetation
16433212	SP2B-50	0.00 - 0.00	Dark Brown	Loamy Sand	Stones	Vegetation
16433219	SP2B-51	0.00 - 0.00	Dark Brown	Sandy Loam	Stones	Vegetation
16433225	SP2B-52	0.00 - 0.00	Dark Brown	Sandy Loam	Stones	Vegetation
16433229	SP2B-53	0.00 - 0.00	Dark Brown	Sandy Loam	Stones	Vegetation
16433233	SP2B-54	0.00 - 0.00	Dark Brown	Sandy Clay Loam	Brick	Stones
16433237	SP2B-55	0.00 - 0.00	Dark Brown	Loamy Sand	Stones	Vegetation
16433243	SP2B-56	0.00 - 0.00	Dark Brown	Sandy Loam	Stones	Vegetation
16433251	SP2B-57	0.00 - 0.00	Dark Brown	Sandy Loam	Stones	N/A
16433260	SP2B-58	0.00 - 0.00	Dark Brown	Sandy Clay Loam	Stones	Crushed Brick
16433270	SP2B-59	0.00 - 0.00	Dark Brown	Sandy Loam	Stones	Vegetation
16433290	SP2B-60	0.00 - 0.00	Dark Brown	Sandy Loam	Stones	Vegetation

These descriptions are only intended to act as a cross check if sample identities are questioned, and to provide a log of sample matrices with respect to MCERTS validation. They are not intended as full geological descriptions.

We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally ocurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample.

Other coarse granular materials such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

Validated

CERTIFICATE OF ANALYSIS

SDG:	171026-67	**Client Reference:**		**Report Number:**	434280
Location:	Llanwern	**Order Number:**	LLA359	**Superseded Report:**	

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	SP2B-31	SP2B-32	SP2B-33	SP2B-34	SP2B-35	SP2B-36
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	25/10/2017	25/10/2017	25/10/2017	25/10/2017	25/10/2017	25/10/2017
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	26/10/2017	26/10/2017	26/10/2017	26/10/2017	26/10/2017	26/10/2017
			SDG Ref	171026-67	171026-67	171026-67	171026-67	171026-67	171026-67
			Lab Sample No.(s)	16433154	16433207	16433282	16433301	16433305	16433310
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		9.8	11	11	9.3	13	11
Actinolite*	-	SUB (ASB)		Not Detected #		Not Detected #		Not Detected #	
Amosite*	-	SUB (ASB)		Not Detected #		Not Detected #		Not Detected #	
Anthophyllite*	-	SUB (ASB)		Not Detected #		Not Detected #		Not Detected #	
Chrysotile*	-	SUB (ASB)		Not Detected #		Not Detected #		Not Detected #	
Crocidolite*	-	SUB (ASB)		Not Detected #		Not Detected #		Not Detected #	
Non-Asbestos Fibres*	-	SUB (ASB)		Not Detected #		Not Detected #		Not Detected #	
Tremolite*	-	SUB (ASB)		Not Detected #		Not Detected #		Not Detected #	
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	<12 M	<12 M	<12 M	<12 M	<12 M
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	0.011 M	<0.01 M	<0.01 M
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 M	0.0113 M	<0.01 M	0.011 M	<0.01 M	<0.01 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M
Sulphur, Total	<0.02 %	TM132		0.29		0.245		0.199	
Sulphate, Total potential	<0.06 %	TM132		0.87		0.735		0.597	
Soil Organic Matter (SOM)	<0.35 %	TM132		10.2 #	12.8 #	6.96 #	13.7 #	40.5 #	12.1 #
pH	1 pH Units	TM133		10.1 M	10.4 M	11.5 M	10.3 M	9.24 M	10 M
Cyanide, Total	<1 mg/kg	TM153		<1 M	<1 M	<1 M	<1 M	1.55 M	<1 M
Arsenic	<0.6 mg/kg	TM181		1.14 M	5.68 M	0.984 M	3.99 M	4.74 M	<6 M
Cadmium	<0.02 mg/kg	TM181		0.0384 M	1.05 M	<0.02 M	1.05 M	0.286 M	1.2 M
Chromium	<0.9 mg/kg	TM181		496 M	160 M	327 M	158 M	27.5 M	451 M
Copper	<1.4 mg/kg	TM181		<1.4 M	10.9 M	4.27 M	9.88 M	8.95 M	17.3 M
Iron	<1000 mg/kg	TM181		80100 #	86200 #	99100 #	87300 #	17400 #	139000 #
Lead	<0.7 mg/kg	TM181		23.9 M	93.5 M	30.8 M	95.4 M	48.3 M	87.5 M
Manganese	<0.13 mg/kg	TM181		21000 M	12300 M	27700 M	14600 M	5430 M	21000 M
Mercury	<0.14 mg/kg	TM181		<0.14 M	<0.14 M	<0.14 M	<0.14 M	0.281 M	<1.4 M
Nickel	<0.2 mg/kg	TM181		5.07 M	13.8 M	3.28 M	10 M	6.83 M	14.1 M
Selenium	<1 mg/kg	TM181		7.72 #	4.74 #	9.09 #	4.9 #	1.04 #	<10 #
Vanadium	<0.2 mg/kg	TM181		802 #	244 #	545 #	226 #	124 #	435 #
Zinc	<1.9 mg/kg	TM181		99 M	325 M	92.5 M	383 M	167 M	294 M
Sulphate, acid soluble (total)	<0.02 %	TM221		0.784		0.357		0.212	
Calcium	<21 mg/kg	TM224		185000		164000		114000	
Magnesium	<8 mg/kg	TM224		23100		9290		11900	

Validated

CERTIFICATE OF ANALYSIS

SDG:	171026-67	**Client Reference:**		**Report Number:**	434280
Location:	Llanwern	**Order Number:**	LLA359	**Superseded Report:**	

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	SP2B-31	SP2B-32	SP2B-33	SP2B-34	SP2B-35	SP2B-36
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	25/10/2017	25/10/2017	25/10/2017	25/10/2017	25/10/2017	25/10/2017
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	26/10/2017	26/10/2017	26/10/2017	26/10/2017	26/10/2017	26/10/2017
			SDG Ref	171026-67	171026-67	171026-67	171026-67	171026-67	171026-67
			Lab Sample No.(s)	16433154	16433207	16433282	16433301	16433305	16433310
			AGS Reference						
Soluble Sulphate 2:1 extract as SO4 BRE	<0.004 g/l	TM243		0.0916 M		0.0981 M		0.112 M	

Validated

CERTIFICATE OF ANALYSIS

SDG:	171026-67	**Client Reference:**		**Report Number:**	434280
Location:	Llanwern	**Order Number:**	LLA359	**Superseded Report:**	

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	SP2B-37	SP2B-38	SP2B-39	SP2B-40	SP2B-41	SP2B-42
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	25/10/2017	25/10/2017	25/10/2017	25/10/2017	25/10/2017	25/10/2017
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	26/10/2017	26/10/2017	26/10/2017	26/10/2017	26/10/2017	26/10/2017
			SDG Ref	171026-67	171026-67	171026-67	171026-67	171026-67	171026-67
			Lab Sample No.(s)	16433315	16433323	16433330	16433159	16433164	16433170
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		11	9.9	11	13	11	12
Actinolite*	-	SUB (ASB)		Not Detected #		Not Detected #		Not Detected #	
Amosite*	-	SUB (ASB)		Not Detected #		Not Detected #		Not Detected #	
Anthophyllite*	-	SUB (ASB)		Not Detected #		Not Detected #		Not Detected #	
Chrysotile*	-	SUB (ASB)		Not Detected #		Not Detected #		Detected #	
Crocidolite*	-	SUB (ASB)		Not Detected #		Not Detected #		Not Detected #	
Non-Asbestos Fibres*	-	SUB (ASB)		Not Detected #		Not Detected #		Not Detected #	
Tremolite*	-	SUB (ASB)		Not Detected #		Not Detected #		Not Detected #	
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	<12 M	<12 M	<12 M	<12 M	<12 M
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M
Sulphur, Total	<0.02 %	TM132		0.0895		0.186		0.206	
Sulphate, Total potential	<0.06 %	TM132		0.269		0.558		0.618	
Soil Organic Matter (SOM)	<0.35 %	TM132		3.02 #	4.93 #	3.74 #	6.55 #	1.14 #	5.65 #
pH	1 pH Units	TM133		9.17 M	9.5 M	9.32 M	9.82 M	9.22 M	9.99 M
Cyanide, Total	<1 mg/kg	TM153		<1 M	<1 M	<1 M	<1 M	<1 M	<1 M
Arsenic	<0.6 mg/kg	TM181		4.72 M	8.41 M	6.94 M	11 M	4.41 M	7.28 M
Cadmium	<0.02 mg/kg	TM181		0.441 M	1.36 M	1.3 M	1.31 M	0.41 M	1.52 M
Chromium	<0.9 mg/kg	TM181		45.1 M	313 M	69.3 M	113 M	140 M	180 M
Copper	<1.4 mg/kg	TM181		9.71 M	16.1 M	13.8 M	24.8 M	9.51 M	24.8 M
Iron	<1000 mg/kg	TM181		32000 #	86200 #	35500 #	109000 #	46500 #	94900 #
Lead	<0.7 mg/kg	TM181		32 M	101 M	73.2 M	82.9 M	41 M	108 M
Manganese	<0.13 mg/kg	TM181		2730 M	11700 M	2910 M	8160 M	11800 M	16400 M
Mercury	<0.14 mg/kg	TM181		0.32 M	<1.4 M	0.338 M	<1.4 M	<0.14 M	<1.4 M
Nickel	<0.2 mg/kg	TM181		18.2 M	15.5 M	19.9 M	24.1 M	10.5 M	18.2 M
Selenium	<1 mg/kg	TM181		1.38 #	<10 #	1.84 #	<10 #	4.5 #	<10 #
Vanadium	<0.2 mg/kg	TM181		68.2 #	376 #	54.6 #	171 #	158 #	335 #
Zinc	<1.9 mg/kg	TM181		120 M	340 M	204 M	251 M	167 M	328 M
Sulphate, acid soluble (total)	<0.02 %	TM221		0.261		0.127		0.303	
Calcium	<21 mg/kg	TM224		44000		52700		129000	
Magnesium	<8 mg/kg	TM224		8270		9820		10900	

Validated

CERTIFICATE OF ANALYSIS

SDG:	171026-67	**Client Reference:**		**Report Number:**	434280
Location:	Llanwern	**Order Number:**	LLA359	**Superseded Report:**	

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	SP2B-37	SP2B-38	SP2B-39	SP2B-40	SP2B-41	SP2B-42
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	25/10/2017	25/10/2017	25/10/2017	25/10/2017	25/10/2017	25/10/2017
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	26/10/2017	26/10/2017	26/10/2017	26/10/2017	26/10/2017	26/10/2017
			SDG Ref	171026-67	171026-67	171026-67	171026-67	171026-67	171026-67
			Lab Sample No.(s)	16433315	16433323	16433330	16433159	16433164	16433170
			AGS Reference						
Soluble Sulphate 2:1 extract as SO4 BRE	<0.004 g/l	TM243		0.0964 M		0.108 M		0.0928 M	

CERTIFICATE OF ANALYSIS

SDG:	171026-67	**Client Reference:**		**Report Number:**	434280
Location:	Llanwern	**Order Number:**	LLA359	**Superseded Report:**	

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	SP2B-43	SP2B-44	SP2B-45	SP2B-46	SP2B-47	SP2B-48
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	25/10/2017	25/10/2017	25/10/2017	25/10/2017	25/10/2017	25/10/2017
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	26/10/2017	26/10/2017	26/10/2017	26/10/2017	26/10/2017	26/10/2017
			SDG Ref	171026-67	171026-67	171026-67	171026-67	171026-67	171026-67
			Lab Sample No.(s)	16433174	16433179	16433185	16433189	16433193	16433197
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		10	12	9.8	10	10	9.4
Actinolite*	-	SUB (ASB)		Not Detected #		Not Detected #		Not Detected #	
Amosite*	-	SUB (ASB)		Not Detected #		Not Detected #		Not Detected #	
Anthophyllite*	-	SUB (ASB)		Not Detected #		Not Detected #		Not Detected #	
Chrysotile*	-	SUB (ASB)		Not Detected #		Not Detected #		Not Detected #	
Crocidolite*	-	SUB (ASB)		Not Detected #		Not Detected #		Not Detected #	
Non-Asbestos Fibres*	-	SUB (ASB)		Not Detected #		Not Detected #		Not Detected #	
Tremolite*	-	SUB (ASB)		Not Detected #		Not Detected #		Not Detected #	
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	<12 M	<12 M	<12 M	<12 M	<12 M
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M
Sulphur, Total	<0.02 %	TM132		0.177		0.146		0.0611	
Sulphate, Total potential	<0.06 %	TM132		0.531		0.438		0.183	
Soil Organic Matter (SOM)	<0.35 %	TM132		3.6 #	5.22 #	1.34 #	5.07 #	5.24 #	11.4 #
pH	1 pH Units	TM133		9.1 M	9.14 M	8.86 M	8.81 M	9.1 M	8.85 M
Cyanide, Total	<1 mg/kg	TM153		<1 M	<1 M	<1 M	<1 M	<1 M	<1 M
Arsenic	<0.6 mg/kg	TM181		4.45 M	<6 M	2.53 M	9.23 M	5.3 M	5.5 M
Cadmium	<0.02 mg/kg	TM181		0.345 M	1.2 M	0.111 M	1.25 M	0.452 M	0.743 M
Chromium	<0.9 mg/kg	TM181		144 M	137 M	2.67 M	25.7 M	65.4 M	8.03 M
Copper	<1.4 mg/kg	TM181		19.5 M	<14 M	10.6 M	21.7 M	14 M	11.3 M
Iron	<1000 mg/kg	TM181		72100 #	90200 #	24100 #	70200 #	38700 #	33800 #
Lead	<0.7 mg/kg	TM181		41 M	87.1 M	19.1 M	117 M	53 M	33.2 M
Manganese	<0.13 mg/kg	TM181		10200 M	9190 M	444 M	4950 M	3150 M	3850 M
Mercury	<0.14 mg/kg	TM181		<0.14 M	<1.4 M	0.525 M	0.624 M	0.363 M	0.483 M
Nickel	<0.2 mg/kg	TM181		13 M	17.1 M	23.1 M	22.9 M	16.5 M	21.4 M
Selenium	<1 mg/kg	TM181		4.62 #	<10 #	<1 #	1.85 #	1.97 #	<1 #
Vanadium	<0.2 mg/kg	TM181		317 #	237 #	14.7 #	81.4 #	76 #	31.4 #
Zinc	<1.9 mg/kg	TM181		154 M	291 M	66.6 M	515 M	127 M	139 M
Sulphate, acid soluble (total)	<0.02 %	TM221		0.487		0.124		0.155	
Calcium	<21 mg/kg	TM224		88200		66000		70700	
Magnesium	<8 mg/kg	TM224		11400		31600		16500	

Results Legend		Customer Sample Ref.	SP2B-43	SP2B-44	SP2B-45	SP2B-46	SP2B-47	SP2B-48
#	ISO17025 accredited.							
M	*m*CERTS accredited.							
aq	Aqueous / settled sample.	Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
diss.filt	Dissolved / filtered sample.	Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
tot.unfilt	Total / unfiltered sample.	Date Sampled	25/10/2017	25/10/2017	25/10/2017	25/10/2017	25/10/2017	25/10/2017
*	Subcontracted test.	Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery	Date Received	26/10/2017	26/10/2017	26/10/2017	26/10/2017	26/10/2017	26/10/2017
		SDG Ref	171026-67	171026-67	171026-67	171026-67	171026-67	171026-67
(F)	Trigger breach confirmed	Lab Sample No.(s)	16433174	16433179	16433185	16433189	16433193	16433197
1-5&+§@	Sample deviation (see appendix)	AGS Reference						

Component	LOD/Units	Method	SP2B-43	SP2B-44	SP2B-45	SP2B-46	SP2B-47	SP2B-48
Soluble Sulphate 2:1 extract as SO4 BRE	<0.004 g/l	TM243	0.0645 M		0.0723 M		0.0392 M	

Validated

CERTIFICATE OF ANALYSIS

SDG:	171026-67	**Client Reference:**		**Report Number:**	434280
Location:	Llanwern	**Order Number:**	LLA359	**Superseded Report:**	

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	SP2B-49	SP2B-50	SP2B-51	SP2B-52	SP2B-53	SP2B-54
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	25/10/2017	25/10/2017	25/10/2017	25/10/2017	25/10/2017	25/10/2017
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	26/10/2017	26/10/2017	26/10/2017	26/10/2017	26/10/2017	26/10/2017
			SDG Ref	171026-67	171026-67	171026-67	171026-67	171026-67	171026-67
			Lab Sample No.(s)	16433203	16433212	16433219	16433225	16433229	16433233
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		12	13	7.5	6.3	11	13
Actinolite*	-	SUB (ASB)		Not Detected #		Not Detected #		Not Detected #	
Amosite*	-	SUB (ASB)		Not Detected #		Detected #		Not Detected #	
Anthophyllite*	-	SUB (ASB)		Not Detected #		Not Detected #		Not Detected #	
Chrysotile*	-	SUB (ASB)		Not Detected #		Detected #		Not Detected #	
Crocidolite*	-	SUB (ASB)		Not Detected #		Not Detected #		Not Detected #	
Non-Asbestos Fibres*	-	SUB (ASB)		Not Detected #		Not Detected #		Not Detected #	
Tremolite*	-	SUB (ASB)		Not Detected #		Not Detected #		Not Detected #	
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	<12 M	<12 M	<12 M	<12 M	<12 M
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Cresols	<0.01 mg/kg	TM062 (S)		0.0113 M	0.0115 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M
Sulphur, Total	<0.02 %	TM132		0.421		0.263		0.208	
Sulphate, Total potential	<0.06 %	TM132		1.26		0.789		0.624	
Soil Organic Matter (SOM)	<0.35 %	TM132		2.12 #	6.15 #	37.9 #	7.22 #	3.29 #	1.91 #
pH	1 pH Units	TM133		8.4 M	8.76 M	9.71 M	9.87 M	8.13 M	10.1 M
Cyanide, Total	<1 mg/kg	TM153		1.7 M	<1 M	<1 M	<1 M	<1 M	<1 M
Arsenic	<0.6 mg/kg	TM181		4.1 M	5.98 M	<6 M	<6 M	<6 M	5.27 M
Cadmium	<0.02 mg/kg	TM181		0.427 M	0.627 M	0.764 M	0.662 M	0.784 M	0.626 M
Chromium	<0.9 mg/kg	TM181		230 M	43.7 M	457 M	170 M	150 M	77.8 M
Copper	<1.4 mg/kg	TM181		11.4 M	5.51 M	66.2 M	<14 M	15.6 M	14 M
Iron	<1000 mg/kg	TM181		37700 #	49700 #	95800 #	59700 #	55200 #	59000 #
Lead	<0.7 mg/kg	TM181		52.2 M	50.7 M	39.1 M	47 M	51.9 M	37.3 M
Manganese	<0.13 mg/kg	TM181		6370 M	3960 M	17500 M	6850 M	8220 M	14500 M
Mercury	<0.14 mg/kg	TM181		<0.14 M	0.605 M	<1.4 M	<1.4 M	<1.4 M	0.473 M
Nickel	<0.2 mg/kg	TM181		9.41 M	15.8 M	5.27 M	16.8 M	17.6 M	12.6 M
Selenium	<1 mg/kg	TM181		2.72 #	1.22 #	<10 #	<10 #	<10 #	1.73 #
Vanadium	<0.2 mg/kg	TM181		79 #	79.5 #	294 #	122 #	256 #	96 #
Zinc	<1.9 mg/kg	TM181		246 M	212 M	108 M	164 M	143 M	135 M
Sulphate, acid soluble (total)	<0.02 %	TM221		0.328		0.266		0.598	
Calcium	<21 mg/kg	TM224		102000		138000		89600	
Magnesium	<8 mg/kg	TM224		12400		8420		11500	

Validated

CERTIFICATE OF ANALYSIS

SDG:	171026-67	**Client Reference:**		**Report Number:**	434280
Location:	Llanwern	**Order Number:**	LLA359	**Superseded Report:**	

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	SP2B-49	SP2B-50	SP2B-51	SP2B-52	SP2B-53	SP2B-54
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	25/10/2017	25/10/2017	25/10/2017	25/10/2017	25/10/2017	25/10/2017
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	26/10/2017	26/10/2017	26/10/2017	26/10/2017	26/10/2017	26/10/2017
			SDG Ref	171026-67	171026-67	171026-67	171026-67	171026-67	171026-67
			Lab Sample No.(s)	16433203	16433212	16433219	16433225	16433229	16433233
			AGS Reference						
Soluble Sulphate 2:1 extract as SO4 BRE	<0.004 g/l	TM243		0.377 M		0.115 M		0.109 M	

Validated

CERTIFICATE OF ANALYSIS

SDG:	171026-67	**Client Reference:**		**Report Number:**	434280
Location:	Llanwern	**Order Number:**	LLA359	**Superseded Report:**	

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	SP2B-55	SP2B-56	SP2B-57	SP2B-58	SP2B-59	SP2B-60
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	25/10/2017	25/10/2017	25/10/2017	25/10/2017	25/10/2017	25/10/2017
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	26/10/2017	26/10/2017	26/10/2017	26/10/2017	26/10/2017	26/10/2017
			SDG Ref	171026-67	171026-67	171026-67	171026-67	171026-67	171026-67
			Lab Sample No.(s)	16433237	16433243	16433251	16433260	16433270	16433290
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		12	6.9	11	11	11	8.5
Actinolite*	-	SUB (ASB)		Not Detected #		Not Detected #		Not Detected #	
Amosite*	-	SUB (ASB)		Not Detected #		Not Detected #		Not Detected #	
Anthophyllite*	-	SUB (ASB)		Not Detected #		Not Detected #		Not Detected #	
Chrysotile*	-	SUB (ASB)		Not Detected #		Not Detected #		Not Detected #	
Crocidolite*	-	SUB (ASB)		Not Detected #		Not Detected #		Not Detected #	
Non-Asbestos Fibres*	-	SUB (ASB)		Not Detected #		Not Detected #		Not Detected #	
Tremolite*	-	SUB (ASB)		Not Detected #		Not Detected #		Not Detected #	
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	<12 M	<12 M	<12 M	<12 M	<12 M
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 M	0.0107 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M
Sulphur, Total	<0.02 %	TM132		0.244		0.0986		0.13	
Sulphate, Total potential	<0.06 %	TM132		0.732		0.296		0.39	
Soil Organic Matter (SOM)	<0.35 %	TM132		5.02 #	2.47 #	1.34 #	14.7 #	7 #	4 #
pH	1 pH Units	TM133		10.3 M	9.26 M	9.82 M	9.64 M	8.48 M	8.86 M
Cyanide, Total	<1 mg/kg	TM153		<1 M	<1 M	<1 M	<1 M	<1 M	<1 M
Arsenic	<0.6 mg/kg	TM181		<6 M	4.65 M	5.01 M	3.79 M	5.74 M	5.89 M
Cadmium	<0.02 mg/kg	TM181		1.07 M	0.843 M	0.454 M	0.303 M	0.318 M	0.672 M
Chromium	<0.9 mg/kg	TM181		150 M	274 M	6.65 M	16.7 M	27.5 M	21.9 M
Copper	<1.4 mg/kg	TM181		14.1 M	4.98 M	9.23 M	7.69 M	10.4 M	1.66 M
Iron	<1000 mg/kg	TM181		92200 #	122000 #	25200 #	46800 #	62300 #	41400 #
Lead	<0.7 mg/kg	TM181		63 M	39 M	40.3 M	41.4 M	35.8 M	90.7 M
Manganese	<0.13 mg/kg	TM181		12500 M	22800 M	1600 M	3020 M	3530 M	5660 M
Mercury	<0.14 mg/kg	TM181		<1.4 M	<0.14 M	0.472 M	0.673 M	0.604 M	1.07 M
Nickel	<0.2 mg/kg	TM181		15.1 M	8.4 M	15.5 M	16.6 M	14.5 M	10.9 M
Selenium	<1 mg/kg	TM181		<10 #	7.83 #	<1 #	1.06 #	2.24 #	1.07 #
Vanadium	<0.2 mg/kg	TM181		495 #	463 #	29.8 #	53.6 #	58.5 #	73.9 #
Zinc	<1.9 mg/kg	TM181		190 M	143 M	172 M	109 M	141 M	427 M
Sulphate, acid soluble (total)	<0.02 %	TM221		1.48		0.379		0.217	
Calcium	<21 mg/kg	TM224		115000		106000		90800	
Magnesium	<8 mg/kg	TM224		12700		27600		24000	

Validated

CERTIFICATE OF ANALYSIS

SDG:	171026-67	**Client Reference:**		**Report Number:**	434280
Location:	Llanwern	**Order Number:**	LLA359	**Superseded Report:**	

Results Legend		**Customer Sample Ref.**	SP2B-55	SP2B-56	SP2B-57	SP2B-58	SP2B-59	SP2B-60
#	ISO17025 accredited.							
M	*m*CERTS accredited.							
aq	Aqueous / settled sample.							
diss.filt	Dissolved / filtered sample.	**Depth (m)**	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
tot.unfilt	Total / unfiltered sample.	**Sample Type**	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
*	Subcontracted test.	**Date Sampled**	25/10/2017	25/10/2017	25/10/2017	25/10/2017	25/10/2017	25/10/2017
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery	**Sample Time**	00:00	00:00	00:00	00:00	00:00	00:00
		Date Received	26/10/2017	26/10/2017	26/10/2017	26/10/2017	26/10/2017	26/10/2017
		SDG Ref	171026-67	171026-67	171026-67	171026-67	171026-67	171026-67
(F)	Trigger breach confirmed	**Lab Sample No.(s)**	16433237	16433243	16433251	16433260	16433270	16433290
1-5&+§@	Sample deviation (see appendix)	**AGS Reference**						

Component	**LOD/Units**	**Method**	SP2B-55	SP2B-56	SP2B-57	SP2B-58	SP2B-59	SP2B-60
Soluble Sulphate 2:1 extract as SO4 BRE	<0.004 g/l	TM243	0.0924 M		0.108 M		0.132 M	

16:52:23 27/11/2017

Validated

CERTIFICATE OF ANALYSIS

SDG:	171026-67	**Client Reference:**		**Report Number:**	434280
Location:	Llanwern	**Order Number:**	LLA359	**Superseded Report:**	

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	SP2B-31	SP2B-32	SP2B-33	SP2B-34	SP2B-35	SP2B-36
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	25/10/2017	25/10/2017	25/10/2017	25/10/2017	25/10/2017	25/10/2017
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	26/10/2017	26/10/2017	26/10/2017	26/10/2017	26/10/2017	26/10/2017
			SDG Ref	171026-67	171026-67	171026-67	171026-67	171026-67	171026-67
			Lab Sample No.(s)	16433154	16433207	16433282	16433301	16433305	16433310
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		114	114	98.8	102	106	97.2
Acenaphthene-d10 % recovery**	%	TM218		114	112	98.5	101	105	100
Phenanthrene-d10 % recovery**	%	TM218		112	112	97.2	99.8	103	99.3
Chrysene-d12 % recovery**	%	TM218		111	124	97.6	102	107	105
Perylene-d12 % recovery**	%	TM218		114	124	101	104	110	108
Naphthalene	<0.009 mg/kg	TM218		8.99 M	17.8 M	8.43 M	21.8 M	29.3 M	2.96 M
Acenaphthylene	<0.012 mg/kg	TM218		1.59 M	3.29 M	1.91 M	3.93 M	3.96 M	0.482 M
Acenaphthene	<0.008 mg/kg	TM218		0.218 M	0.376 M	0.235 M	0.422 M	0.96 M	0.0911 M
Fluorene	<0.01 mg/kg	TM218		1.6 M	3.22 M	2.3 M	4.16 M	3.75 M	0.487 M
Phenanthrene	<0.015 mg/kg	TM218		8.64 M	14.9 M	14.4 M	19.6 M	20.9 M	3.62 M
Anthracene	<0.016 mg/kg	TM218		2.8 M	6.64 M	4.73 M	6.96 M	6.78 M	1.16 M
Fluoranthene	<0.017 mg/kg	TM218		12.1 M	24.7 M	16.8 M	27.9 M	40.7 M	5.89 M
Pyrene	<0.015 mg/kg	TM218		8.67 M	17 M	11 M	18.6 M	27.6 M	4.16 M
Benz(a)anthracene	<0.014 mg/kg	TM218		7.29 M	14.6 M	8.41 M	14.4 M	20.4 M	3.06 M
Chrysene	<0.01 mg/kg	TM218		6.74 M	11.4 M	8.06 M	13.7 M	17.5 M	3.15 M
Benzo(b)fluoranthene	<0.015 mg/kg	TM218		10 M	17.5 M	10.6 M	17.3 M	28 M	4.14 M
Benzo(k)fluoranthene	<0.014 mg/kg	TM218		3.57 M	6.45 M	3.8 M	5.4 M	10.5 M	1.5 M
Benzo(a)pyrene	<0.015 mg/kg	TM218		6.26 M	11.9 M	6.57 M	11.3 M	20 M	2.77 M
Indeno(1,2,3-cd)pyrene	<0.018 mg/kg	TM218		3.84 M	6.7 M	3.92 M	6.55 M	12.8 M	1.68 M
Dibenzo(a,h)anthracene	<0.023 mg/kg	TM218		1.29 M	2.25 M	1.36 M	2.25 M	1.2 M	0.556 M
Benzo(g,h,i)perylene	<0.024 mg/kg	TM218		4.13 M	6.94 M	4.2 M	6.86 M	13.8 M	1.91 M
PAH, Total Detected USEPA 16	<0.118 mg/kg	TM218		87.8	166	107	181	258	37.6

Validated

CERTIFICATE OF ANALYSIS

SDG:	171026-67	**Client Reference:**		**Report Number:**	434280
Location:	Llanwern	**Order Number:**	LLA359	**Superseded Report:**	

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	SP2B-37	SP2B-38	SP2B-39	SP2B-40	SP2B-41	SP2B-42
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	25/10/2017	25/10/2017	25/10/2017	25/10/2017	25/10/2017	25/10/2017
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	26/10/2017	26/10/2017	26/10/2017	26/10/2017	26/10/2017	26/10/2017
			SDG Ref	171026-67	171026-67	171026-67	171026-67	171026-67	171026-67
			Lab Sample No.(s)	16433315	16433323	16433330	16433159	16433164	16433170
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		94.1	98	96.4	101	106	106
Acenaphthene-d10 % recovery**	%	TM218		97.8	100	98.3	104	106	106
Phenanthrene-d10 % recovery**	%	TM218		96.3	100	98.5	103	104	103
Chrysene-d12 % recovery**	%	TM218		103	105	103	109	102	99.7
Perylene-d12 % recovery**	%	TM218		106	109	106	113	107	105
Naphthalene	<0.009 mg/kg	TM218		2.43 M	1.02 M	0.744 M	2.65 M	2.13 M	1.75 M
Acenaphthylene	<0.012 mg/kg	TM218		0.686 M	0.25 M	0.189 M	0.436 M	0.519 M	0.399 M
Acenaphthene	<0.008 mg/kg	TM218		0.129 M	0.0585 M	0.0251 M	0.11 M	0.0624 M	0.0507 M
Fluorene	<0.01 mg/kg	TM218		0.919 M	0.21 M	0.135 M	0.554 M	0.376 M	0.316 M
Phenanthrene	<0.015 mg/kg	TM218		5.59 M	1.43 M	0.929 M	3.48 M	2.18 M	2.22 M
Anthracene	<0.016 mg/kg	TM218		1.32 M	0.416 M	0.247 M	1.17 M	0.658 M	0.604 M
Fluoranthene	<0.017 mg/kg	TM218		7.2 M	2.49 M	1.37 M	5.37 M	4.08 M	3.94 M
Pyrene	<0.015 mg/kg	TM218		4.83 M	1.91 M	0.996 M	3.85 M	2.92 M	2.89 M
Benz(a)anthracene	<0.014 mg/kg	TM218		3.58 M	1.66 M	0.828 M	2.91 M	2.53 M	2.27 M
Chrysene	<0.01 mg/kg	TM218		3.68 M	1.73 M	0.803 M	2.98 M	2.25 M	2.26 M
Benzo(b)fluoranthene	<0.015 mg/kg	TM218		4.51 M	2.58 M	1.31 M	3.95 M	4.17 M	3.2 M
Benzo(k)fluoranthene	<0.014 mg/kg	TM218		1.73 M	0.958 M	0.491 M	1.38 M	1.6 M	1.23 M
Benzo(a)pyrene	<0.015 mg/kg	TM218		3.09 M	1.7 M	0.91 M	2.67 M	2.56 M	2.14 M
Indeno(1,2,3-cd)pyrene	<0.018 mg/kg	TM218		1.84 M	1.05 M	0.598 M	1.62 M	1.7 M	1.38 M
Dibenzo(a,h)anthracene	<0.023 mg/kg	TM218		0.585 M	0.337 M	0.21 M	0.539 M	0.552 M	0.403 M
Benzo(g,h,i)perylene	<0.024 mg/kg	TM218		1.99 M	1.24 M	0.7 M	1.79 M	1.92 M	1.62 M
PAH, Total Detected USEPA 16	<0.118 mg/kg	TM218		44.1	19	10.5	35.4	30.2	26.7

Validated

CERTIFICATE OF ANALYSIS

SDG:	171026-67	**Client Reference:**		**Report Number:**	434280
Location:	Llanwern	**Order Number:**	LLA359	**Superseded Report:**	

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	SP2B-43	SP2B-44	SP2B-45	SP2B-46	SP2B-47	SP2B-48
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	25/10/2017	25/10/2017	25/10/2017	25/10/2017	25/10/2017	25/10/2017
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	26/10/2017	26/10/2017	26/10/2017	26/10/2017	26/10/2017	26/10/2017
			SDG Ref	171026-67	171026-67	171026-67	171026-67	171026-67	171026-67
			Lab Sample No.(s)	16433174	16433179	16433185	16433189	16433193	16433197
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		98.6	98.1	104	109	96.9	113
Acenaphthene-d10 % recovery**	%	TM218		98.3	101	108	109	96	113
Phenanthrene-d10 % recovery**	%	TM218		95.8	100	107	106	92.7	109
Chrysene-d12 % recovery**	%	TM218		93.9	106	112	103	87.4	105
Perylene-d12 % recovery**	%	TM218		98.1	109	115	107	91.5	111
Naphthalene	<0.009 mg/kg	TM218		3.39 M	1.65 M	0.414 M	1.52 M	0.467 M	1 M
Acenaphthylene	<0.012 mg/kg	TM218		0.581 M	0.362 M	0.118 M	0.341 M	0.0878 M	0.2 M
Acenaphthene	<0.008 mg/kg	TM218		0.12 M	0.1 M	0.0312 M	0.0568 M	0.0179 M	0.0389 M
Fluorene	<0.01 mg/kg	TM218		0.663 M	0.303 M	0.0814 M	0.26 M	0.0821 M	0.17 M
Phenanthrene	<0.015 mg/kg	TM218		3.53 M	2.19 M	0.727 M	1.87 M	0.504 M	1.13 M
Anthracene	<0.016 mg/kg	TM218		0.92 M	0.635 M	0.251 M	0.569 M	0.154 M	0.317 M
Fluoranthene	<0.017 mg/kg	TM218		5.45 M	4.23 M	1.35 M	3.22 M	0.806 M	1.7 M
Pyrene	<0.015 mg/kg	TM218		3.77 M	3.26 M	1.05 M	2.29 M	0.583 M	1.23 M
Benz(a)anthracene	<0.014 mg/kg	TM218		3.03 M	2.94 M	0.839 M	1.81 M	0.471 M	1.01 M
Chrysene	<0.01 mg/kg	TM218		2.72 M	3.07 M	0.949 M	1.86 M	0.419 M	0.979 M
Benzo(b)fluoranthene	<0.015 mg/kg	TM218		4.02 M	4.55 M	1.29 M	2.51 M	0.674 M	1.62 M
Benzo(k)fluoranthene	<0.014 mg/kg	TM218		1.5 M	1.82 M	0.466 M	0.92 M	0.278 M	0.5 M
Benzo(a)pyrene	<0.015 mg/kg	TM218		2.8 M	3.26 M	0.837 M	1.63 M	0.413 M	0.957 M
Indeno(1,2,3-cd)pyrene	<0.018 mg/kg	TM218		1.7 M	1.97 M	0.539 M	1.01 M	0.264 M	0.611 M
Dibenzo(a,h)anthracene	<0.023 mg/kg	TM218		0.542 M	0.597 M	0.168 M	0.33 M	0.0824 M	0.188 M
Benzo(g,h,i)perylene	<0.024 mg/kg	TM218		1.92 M	2.18 M	0.622 M	1.16 M	0.303 M	0.727 M
PAH, Total Detected USEPA 16	<0.118 mg/kg	TM218		36.7	33.1	9.74	21.4	5.61	12.4

Validated

CERTIFICATE OF ANALYSIS

SDG:	171026-67	**Client Reference:**		**Report Number:**	434280
Location:	Llanwern	**Order Number:**	LLA359	**Superseded Report:**	

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	SP2B-49	SP2B-50	SP2B-51	SP2B-52	SP2B-53	SP2B-54
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	25/10/2017	25/10/2017	25/10/2017	25/10/2017	25/10/2017	25/10/2017
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	26/10/2017	26/10/2017	26/10/2017	26/10/2017	26/10/2017	26/10/2017
			SDG Ref	171026-67	171026-67	171026-67	171026-67	171026-67	171026-67
			Lab Sample No.(s)	16433203	16433212	16433219	16433225	16433229	16433233
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		94.6	96.4	94.3	87	94	98.1
Acenaphthene-d10 % recovery**	%	TM218		97.6	99.1	96.5	88	96.1	101
Phenanthrene-d10 % recovery**	%	TM218		97.5	98.1	96.9	88.7	95.9	99.2
Chrysene-d12 % recovery**	%	TM218		100	102	105	96.1	104	108
Perylene-d12 % recovery**	%	TM218		103	105	106	97.2	105	109
Naphthalene	<0.009 mg/kg	TM218		0.839 M	1.77 M	9.13 M	8.61 M	7.74 M	3.45 M
Acenaphthylene	<0.012 mg/kg	TM218		0.149 M	0.256 M	0.776 M	0.997 M	1.1 M	0.476 M
Acenaphthene	<0.008 mg/kg	TM218		0.029 M	0.0629 M	0.232 M	0.261 M	0.269 M	0.19 M
Fluorene	<0.01 mg/kg	TM218		0.132 M	0.247 M	0.887 M	0.875 M	2.19 M	0.691 M
Phenanthrene	<0.015 mg/kg	TM218		0.955 M	1.5 M	5.4 M	5.67 M	10.8 M	4.03 M
Anthracene	<0.016 mg/kg	TM218		0.28 M	0.469 M	1.9 M	2.14 M	2.13 M	1.13 M
Fluoranthene	<0.017 mg/kg	TM218		1.38 M	2.35 M	8.66 M	9.87 M	11.7 M	5.38 M
Pyrene	<0.015 mg/kg	TM218		1.01 M	1.69 M	5.94 M	6.92 M	7.57 M	3.84 M
Benz(a)anthracene	<0.014 mg/kg	TM218		0.782 M	1.4 M	4.44 M	5.54 M	5.21 M	2.82 M
Chrysene	<0.01 mg/kg	TM218		0.795 M	1.54 M	4.45 M	4.8 M	4.62 M	2.74 M
Benzo(b)fluoranthene	<0.015 mg/kg	TM218		1.09 M	2.06 M	5.17 M	7.32 M	6.21 M	3.67 M
Benzo(k)fluoranthene	<0.014 mg/kg	TM218		0.401 M	0.71 M	2.23 M	2.74 M	2.3 M	1.25 M
Benzo(a)pyrene	<0.015 mg/kg	TM218		0.723 M	1.31 M	3.8 M	5.04 M	4.18 M	2.37 M
Indeno(1,2,3-cd)pyrene	<0.018 mg/kg	TM218		0.446 M	0.819 M	2.34 M	3.06 M	2.43 M	1.4 M
Dibenzo(a,h)anthracene	<0.023 mg/kg	TM218		0.14 M	0.276 M	0.762 M	1.02 M	0.796 M	0.481 M
Benzo(g,h,i)perylene	<0.024 mg/kg	TM218		0.534 M	0.947 M	2.58 M	3.4 M	2.65 M	1.56 M
PAH, Total Detected USEPA 16	<0.118 mg/kg	TM218		9.67	17.4	58.7	68.3	72	35.5

Validated

CERTIFICATE OF ANALYSIS

SDG:	171026-67	**Client Reference:**		**Report Number:**	434280
Location:	Llanwern	**Order Number:**	LLA359	**Superseded Report:**	

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	SP2B-55	SP2B-56	SP2B-57	SP2B-58	SP2B-59	SP2B-60
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	25/10/2017	25/10/2017	25/10/2017	25/10/2017	25/10/2017	25/10/2017
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	26/10/2017	26/10/2017	26/10/2017	26/10/2017	26/10/2017	26/10/2017
			SDG Ref	171026-67	171026-67	171026-67	171026-67	171026-67	171026-67
			Lab Sample No.(s)	16433237	16433243	16433251	16433260	16433270	16433290
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		94.5	95.1	107	97.4	97.8	89.8
Acenaphthene-d10 % recovery**	%	TM218		96.6	98.2	108	97.3	100	92.1
Phenanthrene-d10 % recovery**	%	TM218		96.4	96.7	106	94.5	101	91
Chrysene-d12 % recovery**	%	TM218		105	99.9	104	92	105	95.7
Perylene-d12 % recovery**	%	TM218		107	103	109	95.9	110	97.6
Naphthalene	<0.009 mg/kg	TM218		3.94 M	1.44 M	2.5 M	4.43 M	0.811 M	1.83 M
Acenaphthylene	<0.012 mg/kg	TM218		0.6 M	0.283 M	0.463 M	0.882 M	0.301 M	0.506 M
Acenaphthene	<0.008 mg/kg	TM218		0.168 M	0.0434 M	0.0928 M	0.166 M	0.0342 M	0.107 M
Fluorene	<0.01 mg/kg	TM218		0.779 M	0.255 M	0.466 M	1.55 M	0.203 M	0.444 M
Phenanthrene	<0.015 mg/kg	TM218		5.23 M	1.61 M	2.69 M	8.07 M	1.52 M	3.15 M
Anthracene	<0.016 mg/kg	TM218		1.65 M	0.469 M	0.762 M	1.63 M	0.481 M	0.955 M
Fluoranthene	<0.017 mg/kg	TM218		10.1 M	2.94 M	4.18 M	8.72 M	3.21 M	6.22 M
Pyrene	<0.015 mg/kg	TM218		6.99 M	2.05 M	2.89 M	6.13 M	2.28 M	4.42 M
Benz(a)anthracene	<0.014 mg/kg	TM218		5.79 M	1.64 M	2.34 M	3.61 M	1.9 M	3.22 M
Chrysene	<0.01 mg/kg	TM218		5.43 M	1.71 M	2.42 M	3.67 M	1.93 M	3.11 M
Benzo(b)fluoranthene	<0.015 mg/kg	TM218		7.03 M	2.13 M	3.4 M	4.38 M	2.86 M	4.15 M
Benzo(k)fluoranthene	<0.014 mg/kg	TM218		2.58 M	0.853 M	1.18 M	1.7 M	1.02 M	1.68 M
Benzo(a)pyrene	<0.015 mg/kg	TM218		4.7 M	1.49 M	2.15 M	3.12 M	1.94 M	2.92 M
Indeno(1,2,3-cd)pyrene	<0.018 mg/kg	TM218		2.74 M	0.903 M	1.37 M	1.77 M	1.22 M	1.75 M
Dibenzo(a,h)anthracene	<0.023 mg/kg	TM218		0.903 M	0.288 M	0.429 M	0.566 M	0.381 M	0.568 M
Benzo(g,h,i)perylene	<0.024 mg/kg	TM218		2.99 M	1.02 M	1.55 M	2.03 M	1.41 M	1.95 M
PAH, Total Detected USEPA 16	<0.118 mg/kg	TM218		61.6	19.1	28.9	52.4	21.5	37

Validated

CERTIFICATE OF ANALYSIS

SDG: 171026-67 **Client Reference:** **Report Number:** 434280
Location: Llanwern **Order Number:** LLA359 **Superseded Report:**

TPH CWG (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	SP2B-31	SP2B-32	SP2B-33	SP2B-34	SP2B-35	SP2B-36
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	25/10/2017	25/10/2017	25/10/2017	25/10/2017	25/10/2017	25/10/2017
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	26/10/2017	26/10/2017	26/10/2017	26/10/2017	26/10/2017	26/10/2017
			SDG Ref	171026-67	171026-67	171026-67	171026-67	171026-67	171026-67
			Lab Sample No.(s)	16433154	16433207	16433282	16433301	16433305	16433310
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		19	28	29	40	14	39
GRO TOT (Moisture Corrected)	<0.044 mg/kg	TM089		<0.044 M	<0.044 M	<0.044 M	0.267 M	<0.044 M	<0.044 M
Methyl tertiary butyl ether (MTBE)	<0.005 mg/kg	TM089		<0.005 #	<0.005 #	<0.005 #	<0.005 #	<0.005 #	<0.005 #
Benzene	<0.01 mg/kg	TM089		<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Toluene	<0.002 mg/kg	TM089		0.00999 M	0.00565 M	0.00448 M	0.022 M	0.00805 M	0.0124 M
Ethylbenzene	<0.003 mg/kg	TM089		<0.003 M	<0.003 M	<0.003 M	<0.003 M	<0.003 M	<0.003 M
m,p-Xylene	<0.006 mg/kg	TM089		<0.006 M	<0.006 M	<0.006 M	0.011 M	<0.006 M	<0.006 M
o-Xylene	<0.003 mg/kg	TM089		<0.003 M	<0.003 M	<0.003 M	0.0033 M	<0.003 M	<0.003 M
sum of detected mpo xylene by GC	<0.009 mg/kg	TM089		<0.009	<0.009	<0.009	0.0143	<0.009	<0.009
sum of detected BTEX by GC	<0.024 mg/kg	TM089		<0.024	<0.024	<0.024	0.0363	<0.024	<0.024
Aliphatics >C5-C6	<0.01 mg/kg	TM089		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aliphatics >C6-C8	<0.01 mg/kg	TM089		<0.01	<0.01	<0.01	0.0286	<0.01	<0.01
Aliphatics >C8-C10	<0.01 mg/kg	TM089		<0.01	<0.01	<0.01	0.0352	<0.01	<0.01
Aliphatics >C10-C12	<0.01 mg/kg	TM089		<0.01	<0.01	<0.01	0.077	<0.01	<0.01
Aliphatics >C12-C16	<0.1 mg/kg	TM173		4.86	2.61	4.18	5.97	6.54	3.32
Aliphatics >C16-C21	<0.1 mg/kg	TM173		44.7	14.6	23.7	25	43.9	18.8
Aliphatics >C21-C35	<0.1 mg/kg	TM173		82.2	44	48.5	59.8	66.5	48.6
Aliphatics >C35-C44	<0.1 mg/kg	TM173		24.7	13.4	7.49	18.9	15.1	18.1
Total Aliphatics >C12-C44	<0.1 mg/kg	TM173		156	74.6	83.9	110	132	88.7
Aromatics >EC5-EC7	<0.01 mg/kg	TM089		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aromatics >EC7-EC8	<0.01 mg/kg	TM089		<0.01	<0.01	<0.01	0.022	<0.01	0.0124
Aromatics >EC8-EC10	<0.01 mg/kg	TM089		<0.01	<0.01	<0.01	0.0385	<0.01	<0.01
Aromatics >EC10-EC12	<0.01 mg/kg	TM089		<0.01	<0.01	<0.01	0.0506	<0.01	<0.01
Aromatics >EC12-EC16	<0.1 mg/kg	TM173		10.1	8.86	12.1	18.2	21.2	6.09
Aromatics >EC16-EC21	<0.1 mg/kg	TM173		56.3	43.6	60.8	94.3	207	28.7
Aromatics >EC21-EC35	<0.1 mg/kg	TM173		167	125	159	242	533	99.3
Aromatics >EC35-EC44	<0.1 mg/kg	TM173		54.6	33.8	41.1	64.4	122	49.3
Aromatics >EC40-EC44	<0.1 mg/kg	TM173		21.2	12.1	14.1	22.5	39.6	21
Total Aromatics >EC12-EC44	<0.1 mg/kg	TM173		288	211	273	419	884	183
Total Aliphatics & Aromatics >C5-C44	<0.1 mg/kg	TM173		445	286	357	529	1020	272

Validated

CERTIFICATE OF ANALYSIS

SDG:	171026-67	**Client Reference:**		**Report Number:**	434280
Location:	Llanwern	**Order Number:**	LLA359	**Superseded Report:**	

TPH CWG (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	SP2B-37	SP2B-38	SP2B-39	SP2B-40	SP2B-41	SP2B-42
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	25/10/2017	25/10/2017	25/10/2017	25/10/2017	25/10/2017	25/10/2017
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	26/10/2017	26/10/2017	26/10/2017	26/10/2017	26/10/2017	26/10/2017
			SDG Ref	171026-67	171026-67	171026-67	171026-67	171026-67	171026-67
			Lab Sample No.(s)	16433315	16433323	16433330	16433159	16433164	16433170
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		57	54	76	52	48	49
GRO TOT (Moisture Corrected)	<0.044 mg/kg	TM089		<0.044 M	<0.044 M	<0.044 M	<0.044 M	<0.044 M	<0.176 M
Methyl tertiary butyl ether (MTBE)	<0.005 mg/kg	TM089		<0.005 #	<0.005 #	<0.005 #	<0.005 #	<0.005 #	<0.02 #
Benzene	<0.01 mg/kg	TM089		<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.04 M
Toluene	<0.002 mg/kg	TM089		0.00678 M	0.0111 M	0.0056 M	0.0092 M	0.0113 M	0.0365 M
Ethylbenzene	<0.003 mg/kg	TM089		<0.003 M	<0.003 M	<0.003 M	<0.003 M	<0.003 M	<0.012 M
m,p-Xylene	<0.006 mg/kg	TM089		<0.006 M	<0.006 M	<0.006 M	<0.006 M	<0.006 M	<0.024 M
o-Xylene	<0.003 mg/kg	TM089		<0.003 M	<0.003 M	<0.003 M	<0.003 M	<0.003 M	<0.012 M
sum of detected mpo xylene by GC	<0.009 mg/kg	TM089		<0.009	<0.009	<0.009	<0.009	<0.009	<0.009
sum of detected BTEX by GC	<0.024 mg/kg	TM089		<0.024	<0.024	<0.024	<0.024	<0.024	0.0365
Aliphatics >C5-C6	<0.01 mg/kg	TM089		<0.01	<0.01	<0.01	<0.01	<0.01	<0.04
Aliphatics >C6-C8	<0.01 mg/kg	TM089		<0.01	<0.01	<0.01	<0.01	<0.01	<0.04
Aliphatics >C8-C10	<0.01 mg/kg	TM089		<0.01	<0.01	<0.01	<0.01	<0.01	<0.04
Aliphatics >C10-C12	<0.01 mg/kg	TM089		<0.01	<0.01	<0.01	<0.01	<0.01	<0.04
Aliphatics >C12-C16	<0.1 mg/kg	TM173		1.67	1.19	1.04	1.06	1.56	1.12
Aliphatics >C16-C21	<0.1 mg/kg	TM173		7.39	7.95	3.99	4.18	6.94	3.79
Aliphatics >C21-C35	<0.1 mg/kg	TM173		30.1	106	32.8	17.6	39.5	19.9
Aliphatics >C35-C44	<0.1 mg/kg	TM173		12.8	16.3	25.9	5.31	16.5	5.16
Total Aliphatics >C12-C44	<0.1 mg/kg	TM173		51.9	132	63.7	28.1	64.5	30
Aromatics >EC5-EC7	<0.01 mg/kg	TM089		<0.01	<0.01	<0.01	<0.01	<0.01	<0.04
Aromatics >EC7-EC8	<0.01 mg/kg	TM089		<0.01	0.0111	<0.01	<0.01	0.0113	<0.04
Aromatics >EC8-EC10	<0.01 mg/kg	TM089		<0.01	<0.01	<0.01	<0.01	<0.01	<0.04
Aromatics >EC10-EC12	<0.01 mg/kg	TM089		<0.01	<0.01	<0.01	<0.01	<0.01	<0.04
Aromatics >EC12-EC16	<0.1 mg/kg	TM173		3.42	2.66	1.79	3.68	3.13	3.5
Aromatics >EC16-EC21	<0.1 mg/kg	TM173		16.6	14.4	7.3	17	15.6	14.4
Aromatics >EC21-EC35	<0.1 mg/kg	TM173		73.5	82.7	57	51.1	70.2	66.4
Aromatics >EC35-EC44	<0.1 mg/kg	TM173		34.4	30.8	52.5	16.5	28.3	25.3
Aromatics >EC40-EC44	<0.1 mg/kg	TM173		15.5	13.5	23.2	7.01	11	9.49
Total Aromatics >EC12-EC44	<0.1 mg/kg	TM173		128	131	119	88.2	117	110
Total Aliphatics & Aromatics >C5-C44	<0.1 mg/kg	TM173		180	262	182	116	182	140

Validated

CERTIFICATE OF ANALYSIS

SDG:	171026-67	**Client Reference:**		**Report Number:**	434280
Location:	Llanwern	**Order Number:**	LLA359	**Superseded Report:**	

TPH CWG (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	SP2B-43	SP2B-44	SP2B-45	SP2B-46	SP2B-47	SP2B-48
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	25/10/2017	25/10/2017	25/10/2017	25/10/2017	25/10/2017	25/10/2017
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	26/10/2017	26/10/2017	26/10/2017	26/10/2017	26/10/2017	26/10/2017
			SDG Ref	171026-67	171026-67	171026-67	171026-67	171026-67	171026-67
			Lab Sample No.(s)	16433174	16433179	16433185	16433189	16433193	16433197
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		53	77	82	95	66	50
GRO TOT (Moisture Corrected)	<0.044 mg/kg	TM089		<0.044 M	<0.176 M	<0.044 M	0.216 M	<0.044 M	<0.176 M
Methyl tertiary butyl ether (MTBE)	<0.005 mg/kg	TM089		<0.005 #	<0.02 #	<0.005 #	<0.02 #	<0.005 #	<0.02 #
Benzene	<0.01 mg/kg	TM089		<0.01 M	<0.04 M	<0.01 M	<0.04 M	<0.01 M	<0.04 M
Toluene	<0.002 mg/kg	TM089		0.00666 M	0.0294 M	0.00222 M	0.0123 M	0.00666 M	0.0176 M
Ethylbenzene	<0.003 mg/kg	TM089		<0.003 M	<0.012 M	<0.003 M	<0.012 M	<0.003 M	<0.012 M
m,p-Xylene	<0.006 mg/kg	TM089		<0.006 M	<0.024 M	<0.006 M	<0.024 M	<0.006 M	<0.024 M
o-Xylene	<0.003 mg/kg	TM089		<0.003 M	<0.012 M	<0.003 M	<0.012 M	<0.003 M	<0.012 M
sum of detected mpo xylene by GC	<0.009 mg/kg	TM089		<0.009	<0.009	<0.009	<0.009	<0.009	<0.009
sum of detected BTEX by GC	<0.024 mg/kg	TM089		<0.024	0.0294	<0.024	<0.024	<0.024	<0.024
Aliphatics >C5-C6	<0.01 mg/kg	TM089		<0.01	<0.04	<0.01	<0.04	<0.01	<0.04
Aliphatics >C6-C8	<0.01 mg/kg	TM089		<0.01	<0.04	<0.01	0.0482	<0.01	<0.04
Aliphatics >C8-C10	<0.01 mg/kg	TM089		<0.01	<0.04	<0.01	<0.04	<0.01	<0.04
Aliphatics >C10-C12	<0.01 mg/kg	TM089		<0.01	<0.04	<0.01	<0.04	<0.01	<0.04
Aliphatics >C12-C16	<0.1 mg/kg	TM173		0.707	1.31	0.809	0.89	<0.1	<0.1
Aliphatics >C16-C21	<0.1 mg/kg	TM173		5.47	6	3.31	4.67	1.86	3.34
Aliphatics >C21-C35	<0.1 mg/kg	TM173		21	30.5	17.5	22.9	10.8	28.3
Aliphatics >C35-C44	<0.1 mg/kg	TM173		7.36	14.5	3.15	5.98	2.1	12.9
Total Aliphatics >C12-C44	<0.1 mg/kg	TM173		34.6	52.3	24.7	34.4	14.8	44.5
Aromatics >EC5-EC7	<0.01 mg/kg	TM089		<0.01	<0.04	<0.01	<0.04	<0.01	<0.04
Aromatics >EC7-EC8	<0.01 mg/kg	TM089		<0.01	<0.04	<0.01	<0.04	<0.01	<0.04
Aromatics >EC8-EC10	<0.01 mg/kg	TM089		<0.01	<0.04	<0.01	<0.04	<0.01	<0.04
Aromatics >EC10-EC12	<0.01 mg/kg	TM089		<0.01	<0.04	<0.01	<0.04	<0.01	<0.04
Aromatics >EC12-EC16	<0.1 mg/kg	TM173		3.49	2.34	1.45	1.7	1.19	2.56
Aromatics >EC16-EC21	<0.1 mg/kg	TM173		19.9	15.6	6.67	11.3	7	14.5
Aromatics >EC21-EC35	<0.1 mg/kg	TM173		76.3	84.7	35.1	46.4	29.2	63.8
Aromatics >EC35-EC44	<0.1 mg/kg	TM173		24.8	44	26.2	14.8	9.68	25.2
Aromatics >EC40-EC44	<0.1 mg/kg	TM173		9.94	20	12.9	5.58	3.63	9.92
Total Aromatics >EC12-EC44	<0.1 mg/kg	TM173		124	147	69.4	74.2	47.1	106
Total Aliphatics & Aromatics >C5-C44	<0.1 mg/kg	TM173		159	199	94.1	109	61.9	151

Validated

CERTIFICATE OF ANALYSIS

SDG:	171026-67	**Client Reference:**		**Report Number:**	434280
Location:	Llanwern	**Order Number:**	LLA359	**Superseded Report:**	

TPH CWG (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	SP2B-49	SP2B-50	SP2B-51	SP2B-52	SP2B-53	SP2B-54
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	25/10/2017	25/10/2017	25/10/2017	25/10/2017	25/10/2017	25/10/2017
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	26/10/2017	26/10/2017	26/10/2017	26/10/2017	26/10/2017	26/10/2017
			SDG Ref	171026-67	171026-67	171026-67	171026-67	171026-67	171026-67
			Lab Sample No.(s)	16433203	16433212	16433219	16433225	16433229	16433233
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		89	53	38	19	65	50
GRO TOT (Moisture Corrected)	<0.044 mg/kg	TM089		0.292 M	<0.044 M	0.281 M	<0.176 M	0.356 M	<0.176 M
Methyl tertiary butyl ether (MTBE)	<0.005 mg/kg	TM089		<0.02 #	<0.005 #	<0.02 #	<0.02 #	<0.02 #	<0.02 #
Benzene	<0.01 mg/kg	TM089		<0.04 M	<0.01 M	<0.04 M	<0.04 M	<0.04 M	<0.04 M
Toluene	<0.002 mg/kg	TM089		<0.008 M	0.0023 M	0.027 M	0.0758 M	0.0328 M	0.0506 M
Ethylbenzene	<0.003 mg/kg	TM089		<0.012 M	<0.003 M	<0.012 M	<0.012 M	<0.012 M	<0.012 M
m,p-Xylene	<0.006 mg/kg	TM089		<0.024 M	<0.006 M	<0.024 M	<0.024 M	<0.024 M	<0.024 M
o-Xylene	<0.003 mg/kg	TM089		<0.012 M	<0.003 M	<0.012 M	<0.012 M	<0.012 M	<0.012 M
sum of detected mpo xylene by GC	<0.009 mg/kg	TM089		<0.009	<0.009	<0.009	<0.009	<0.009	<0.009
sum of detected BTEX by GC	<0.024 mg/kg	TM089		<0.024	<0.024	0.027	0.0758	0.0328	0.0506
Aliphatics >C5-C6	<0.01 mg/kg	TM089		<0.04	<0.01	<0.04	<0.04	<0.04	<0.04
Aliphatics >C6-C8	<0.01 mg/kg	TM089		0.0599	<0.01	0.067	<0.04	0.0554	<0.04
Aliphatics >C8-C10	<0.01 mg/kg	TM089		0.0542	<0.01	<0.04	<0.04	0.0475	<0.04
Aliphatics >C10-C12	<0.01 mg/kg	TM089		0.052	<0.01	0.0422	<0.04	0.0768	<0.04
Aliphatics >C12-C16	<0.1 mg/kg	TM173		1.44	1.79	3.22	3.54	3.2	1.28
Aliphatics >C16-C21	<0.1 mg/kg	TM173		5.56	5.37	15.6	14.9	16.8	6.38
Aliphatics >C21-C35	<0.1 mg/kg	TM173		29.2	23.6	36.1	36.8	41	23.3
Aliphatics >C35-C44	<0.1 mg/kg	TM173		8.93	6.6	8.94	9.55	14.1	9.14
Total Aliphatics >C12-C44	<0.1 mg/kg	TM173		45.1	37.3	63.9	64.8	75	40
Aromatics >EC5-EC7	<0.01 mg/kg	TM089		<0.04	<0.01	<0.04	<0.04	<0.04	<0.04
Aromatics >EC7-EC8	<0.01 mg/kg	TM089		<0.04	<0.01	<0.04	0.0758	<0.04	0.0506
Aromatics >EC8-EC10	<0.01 mg/kg	TM089		0.0463	<0.01	0.0443	<0.04	0.0554	<0.04
Aromatics >EC10-EC12	<0.01 mg/kg	TM089		<0.04	<0.01	<0.04	<0.04	0.0509	<0.04
Aromatics >EC12-EC16	<0.1 mg/kg	TM173		1.93	4.87	7.47	8.21	6.77	2.65
Aromatics >EC16-EC21	<0.1 mg/kg	TM173		10	17.7	45.3	45.3	35.1	14.2
Aromatics >EC21-EC35	<0.1 mg/kg	TM173		48.7	66.5	126	140	108	53.2
Aromatics >EC35-EC44	<0.1 mg/kg	TM173		19.8	24.4	31	39.1	38.8	21
Aromatics >EC40-EC44	<0.1 mg/kg	TM173		7.58	8.83	12.5	16	17.1	9.33
Total Aromatics >EC12-EC44	<0.1 mg/kg	TM173		80.5	114	209	233	189	91.1
Total Aliphatics & Aromatics >C5-C44	<0.1 mg/kg	TM173		126	151	274	298	264	131

Validated

CERTIFICATE OF ANALYSIS

SDG:	171026-67	**Client Reference:**		**Report Number:**	434280
Location:	Llanwern	**Order Number:**	LLA359	**Superseded Report:**	

TPH CWG (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	SP2B-55	SP2B-56	SP2B-57	SP2B-58	SP2B-59	SP2B-60
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	25/10/2017	25/10/2017	25/10/2017	25/10/2017	25/10/2017	25/10/2017
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	26/10/2017	26/10/2017	26/10/2017	26/10/2017	26/10/2017	26/10/2017
			SDG Ref	171026-67	171026-67	171026-67	171026-67	171026-67	171026-67
			Lab Sample No.(s)	16433237	16433243	16433251	16433260	16433270	16433290
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		48	48	90	49	62	61
GRO TOT (Moisture Corrected)	<0.044 mg/kg	TM089		<0.044 M	<0.044 M	0.0952 M	<0.176 M	<0.044 M	<0.176 M
Methyl tertiary butyl ether (MTBE)	<0.005 mg/kg	TM089		<0.005 #	<0.005 #	<0.005 #	<0.02 #	<0.005 #	<0.02 #
Benzene	<0.01 mg/kg	TM089		<0.01 M	<0.01 M	<0.01 M	<0.04 M	<0.01 M	<0.04 M
Toluene	<0.002 mg/kg	TM089		0.0103 M	0.0118 M	0.0224 M	0.0347 M	0.00565 M	0.0426 M
Ethylbenzene	<0.003 mg/kg	TM089		<0.003 M	<0.003 M	<0.003 M	<0.012 M	<0.003 M	<0.012 M
m,p-Xylene	<0.006 mg/kg	TM089		<0.006 M	<0.006 M	<0.006 M	<0.024 M	<0.006 M	<0.024 M
o-Xylene	<0.003 mg/kg	TM089		<0.003 M	<0.003 M	<0.003 M	<0.012 M	<0.003 M	<0.012 M
sum of detected mpo xylene by GC	<0.009 mg/kg	TM089		<0.009	<0.009	<0.009	<0.009	<0.009	<0.009
sum of detected BTEX by GC	<0.024 mg/kg	TM089		<0.024	<0.024	<0.024	0.0347	<0.024	0.0426
Aliphatics >C5-C6	<0.01 mg/kg	TM089		<0.01	<0.01	<0.01	<0.04	<0.01	<0.04
Aliphatics >C6-C8	<0.01 mg/kg	TM089		<0.01	<0.01	0.0101	<0.04	<0.01	<0.04
Aliphatics >C8-C10	<0.01 mg/kg	TM089		<0.01	<0.01	0.0134	<0.04	<0.01	<0.04
Aliphatics >C10-C12	<0.01 mg/kg	TM089		<0.01	<0.01	0.019	<0.04	<0.01	<0.04
Aliphatics >C12-C16	<0.1 mg/kg	TM173		2.09	1.82	0.907	1.26	1.16	1.85
Aliphatics >C16-C21	<0.1 mg/kg	TM173		11	9.23	6.87	7.35	5.17	9.01
Aliphatics >C21-C35	<0.1 mg/kg	TM173		34.7	33.8	46.3	30	25	36.2
Aliphatics >C35-C44	<0.1 mg/kg	TM173		11	16.2	13.5	13.7	31.6	10.8
Total Aliphatics >C12-C44	<0.1 mg/kg	TM173		58.8	61.1	67.5	52.2	63	57.8
Aromatics >EC5-EC7	<0.01 mg/kg	TM089		<0.01	<0.01	<0.01	<0.04	<0.01	<0.04
Aromatics >EC7-EC8	<0.01 mg/kg	TM089		0.0103	0.0118	0.0224	<0.04	<0.01	0.0426
Aromatics >EC8-EC10	<0.01 mg/kg	TM089		<0.01	<0.01	0.0134	<0.04	<0.01	<0.04
Aromatics >EC10-EC12	<0.01 mg/kg	TM089		<0.01	<0.01	0.0134	<0.04	<0.01	<0.04
Aromatics >EC12-EC16	<0.1 mg/kg	TM173		3.83	4.05	2.88	3.43	1.82	5.93
Aromatics >EC16-EC21	<0.1 mg/kg	TM173		23.4	35.9	16.8	19.2	7.91	45.3
Aromatics >EC21-EC35	<0.1 mg/kg	TM173		79.1	107	70.4	71.6	44.2	127
Aromatics >EC35-EC44	<0.1 mg/kg	TM173		26.1	47.9	25.2	32.9	54.3	42.6
Aromatics >EC40-EC44	<0.1 mg/kg	TM173		11.2	19.2	9.6	13.6	27.1	15.3
Total Aromatics >EC12-EC44	<0.1 mg/kg	TM173		132	194	115	127	108	221
Total Aliphatics & Aromatics >C5-C44	<0.1 mg/kg	TM173		191	255	183	180	171	279

Table of Results - Appendix

Method No	Reference	Description
ASB_PREP		
PM001		Preparation of Samples for Metals Analysis
PM024	Modified BS 1377	Soil preparation including homogenisation, moisture screens of soils for Asbestos Containing Material
SUB (ASB)		
TM024	Method 4500A & B, AWWA/APHA, 20th Ed., 1999	Determination of Exchangeable Ammonium and Ammoniacal Nitrogen as N by titration on solids
TM062 (S)	National Grid Property Holdings Methods for the Collection & Analysis of Samples from National Grid Sites version 1 Sec 3.9	Determination of Phenols in Soils by HPLC
TM089	Modified: US EPA Methods 8020 & 602	Determination of Gasoline Range Hydrocarbons (GRO) and BTEX (MTBE) compounds by Headspace GC-FID (C4-C12)
TM132	In - house Method	ELTRA CS800 Operators Guide
TM133	BS 1377: Part 3 1990;BS 6068-2.5	Determination of pH in Soil and Water using the GLpH pH Meter
TM153	Method 4500A,B,C, I, M AWWA/APHA, 20th Ed., 1999	Determination of Total Cyanide, Free (Easily Liberatable) Cyanide and Thiocyanate using the Skalar SANS+ System Segmented Flow Analyser
TM173	Analysis of Petroleum Hydrocarbons in Environmental Media – Total Petroleum Hydrocarbon Criteria	Determination of Speciated Extractable Petroleum Hydrocarbons in Soils by GC-FID
TM181	US EPA Method 6010B	Determination of Routine Metals in Soil by iCap 6500 Duo ICP-OES
TM218	Determination of PAH by GCMS Microwave extraction	The determination of PAH in soil samples by microwave extraction and GC-MS
TM221	Inductively Coupled Plasma - Atomic Emission Spectroscopy. An Atlas of Spectral Information: Winge, Fassel, Peterson and Floyd	Determination of Acid extractable Sulphate in Soils by IRIS Emission Spectrometer
TM224	US EPA Method 6010B	Determination of Alkaline Metals by iCap 6500 Duo ICP-OES
TM243		Mixed Anions In Soils By Kone

NA = not applicable.

Chemical testing (unless subcontracted) performed at ALS Environmental Hawarden (Method codes TM) or ALS Environmental Aberdeen (Method codes S).

CERTIFICATE OF ANALYSIS

SDG:	171026-67	**Client Reference:**		**Report Number:**	434280
Location:	Llanwern	**Order Number:**	LLA359	**Superseded Report:**	

Test Completion Dates

Lab Sample No(s)	16433154	16433207	16433282	16433301	16433305	16433310	16433315	16433323	16433330	16433159
Customer Sample Ref.	SP2B-31	SP2B-32	SP2B-33	SP2B-34	SP2B-35	SP2B-36	SP2B-37	SP2B-38	SP2B-39	SP2B-40
AGS Ref.										
Depth	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
Alkali Metals by iCap-OES (Soil)	06-Nov-2017		06-Nov-2017		06-Nov-2017		06-Nov-2017		08-Nov-2017	
Ammonium Soil by Titration	06-Nov-2017	07-Nov-2017	06-Nov-2017	06-Nov-2017	06-Nov-2017	06-Nov-2017	07-Nov-2017	07-Nov-2017	06-Nov-2017	07-Nov-2017
Anions by Kone (soil)	06-Nov-2017		06-Nov-2017		06-Nov-2017		06-Nov-2017		06-Nov-2017	
Asbestos ID*	16-Nov-2017		16-Nov-2017		16-Nov-2017		16-Nov-2017		16-Nov-2017	
Cyanide Comp/Free/Total/Thiocyanate	07-Nov-2017	06-Nov-2017	07-Nov-2017	07-Nov-2017	06-Nov-2017	06-Nov-2017	07-Nov-2017	07-Nov-2017	07-Nov-2017	06-Nov-2017
EPH CWG (Aliphatic) GC (S)	06-Nov-2017	06-Nov-2017	06-Nov-2017	06-Nov-2017	06-Nov-2017	06-Nov-2017	07-Nov-2017	07-Nov-2017	06-Nov-2017	07-Nov-2017
EPH CWG (Aromatic) GC (S)	06-Nov-2017	06-Nov-2017	06-Nov-2017	06-Nov-2017	06-Nov-2017	06-Nov-2017	07-Nov-2017	07-Nov-2017	06-Nov-2017	07-Nov-2017
GRO by GC-FID (S)	04-Nov-2017	04-Nov-2017	04-Nov-2017	04-Nov-2017	04-Nov-2017	04-Nov-2017	04-Nov-2017	04-Nov-2017	04-Nov-2017	04-Nov-2017
Metals in solid samples by OES	08-Nov-2017	10-Nov-2017	14-Nov-2017	10-Nov-2017	08-Nov-2017	07-Nov-2017	07-Nov-2017	07-Nov-2017	07-Nov-2017	07-Nov-2017
PAH by GCMS	06-Nov-2017	08-Nov-2017	06-Nov-2017	06-Nov-2017	06-Nov-2017	06-Nov-2017	06-Nov-2017	06-Nov-2017	06-Nov-2017	06-Nov-2017
pH	03-Nov-2017	03-Nov-2017	03-Nov-2017	03-Nov-2017	03-Nov-2017	06-Nov-2017	03-Nov-2017	06-Nov-2017	06-Nov-2017	06-Nov-2017
Phenols by HPLC (S)	07-Nov-2017	08-Nov-2017	07-Nov-2017	08-Nov-2017	08-Nov-2017	08-Nov-2017	08-Nov-2017	08-Nov-2017	07-Nov-2017	07-Nov-2017
Sample description	03-Nov-2017	03-Nov-2017	03-Nov-2017	03-Nov-2017	03-Nov-2017	03-Nov-2017	03-Nov-2017	03-Nov-2017	03-Nov-2017	03-Nov-2017
Total Organic Carbon	10-Nov-2017	10-Nov-2017	10-Nov-2017	10-Nov-2017	10-Nov-2017	10-Nov-2017	10-Nov-2017	10-Nov-2017	10-Nov-2017	09-Nov-2017
Total Sulphate	06-Nov-2017		06-Nov-2017		06-Nov-2017		06-Nov-2017		06-Nov-2017	
Total Sulphur	07-Nov-2017		07-Nov-2017		07-Nov-2017		07-Nov-2017		07-Nov-2017	
TPH CWG GC (S)	06-Nov-2017	06-Nov-2017	06-Nov-2017	06-Nov-2017	06-Nov-2017	06-Nov-2017	07-Nov-2017	07-Nov-2017	06-Nov-2017	07-Nov-2017

Lab Sample No(s)	16433164	16433170	16433174	16433179	16433185	16433189	16433193	16433197	16433203	16433212
Customer Sample Ref.	SP2B-41	SP2B-42	SP2B-43	SP2B-44	SP2B-45	SP2B-46	SP2B-47	SP2B-48	SP2B-49	SP2B-50
AGS Ref.										
Depth	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
Alkali Metals by iCap-OES (Soil)	06-Nov-2017		06-Nov-2017		06-Nov-2017		06-Nov-2017		08-Nov-2017	
Ammonium Soil by Titration	07-Nov-2017	06-Nov-2017	07-Nov-2017	07-Nov-2017	06-Nov-2017	06-Nov-2017	07-Nov-2017	06-Nov-2017	07-Nov-2017	07-Nov-2017
Anions by Kone (soil)	06-Nov-2017		06-Nov-2017		06-Nov-2017		06-Nov-2017		06-Nov-2017	
Asbestos ID*	16-Nov-2017		16-Nov-2017		16-Nov-2017		16-Nov-2017		16-Nov-2017	
Cyanide Comp/Free/Total/Thiocyanate	06-Nov-2017	07-Nov-2017	07-Nov-2017	07-Nov-2017	06-Nov-2017	07-Nov-2017	06-Nov-2017	06-Nov-2017	06-Nov-2017	06-Nov-2017
EPH CWG (Aliphatic) GC (S)	06-Nov-2017	06-Nov-2017	06-Nov-2017	07-Nov-2017	06-Nov-2017	06-Nov-2017	06-Nov-2017	06-Nov-2017	06-Nov-2017	06-Nov-2017
EPH CWG (Aromatic) GC (S)	06-Nov-2017	06-Nov-2017	06-Nov-2017	07-Nov-2017	06-Nov-2017	06-Nov-2017	06-Nov-2017	06-Nov-2017	06-Nov-2017	06-Nov-2017
GRO by GC-FID (S)	04-Nov-2017	05-Nov-2017	04-Nov-2017	05-Nov-2017	04-Nov-2017	06-Nov-2017	04-Nov-2017	05-Nov-2017	06-Nov-2017	04-Nov-2017
Metals in solid samples by OES	08-Nov-2017	07-Nov-2017	08-Nov-2017	07-Nov-2017	07-Nov-2017	09-Nov-2017	07-Nov-2017	09-Nov-2017	08-Nov-2017	10-Nov-2017
PAH by GCMS	06-Nov-2017	06-Nov-2017	06-Nov-2017	06-Nov-2017	06-Nov-2017	06-Nov-2017	06-Nov-2017	06-Nov-2017	06-Nov-2017	06-Nov-2017
pH	03-Nov-2017	03-Nov-2017	03-Nov-2017	06-Nov-2017	06-Nov-2017	03-Nov-2017	03-Nov-2017	03-Nov-2017	03-Nov-2017	03-Nov-2017
Phenols by HPLC (S)	08-Nov-2017	07-Nov-2017	08-Nov-2017	08-Nov-2017	08-Nov-2017	08-Nov-2017	08-Nov-2017	07-Nov-2017	06-Nov-2017	06-Nov-2017
Sample description	03-Nov-2017	03-Nov-2017	03-Nov-2017	03-Nov-2017	03-Nov-2017	03-Nov-2017	03-Nov-2017	03-Nov-2017	03-Nov-2017	03-Nov-2017
Total Organic Carbon	10-Nov-2017	10-Nov-2017	10-Nov-2017	10-Nov-2017	10-Nov-2017	10-Nov-2017	10-Nov-2017	10-Nov-2017	10-Nov-2017	09-Nov-2017
Total Sulphate	06-Nov-2017		06-Nov-2017		06-Nov-2017		06-Nov-2017		06-Nov-2017	
Total Sulphur	07-Nov-2017		07-Nov-2017		07-Nov-2017		07-Nov-2017		07-Nov-2017	
TPH CWG GC (S)	06-Nov-2017	06-Nov-2017	06-Nov-2017	07-Nov-2017	06-Nov-2017	06-Nov-2017	06-Nov-2017	06-Nov-2017	06-Nov-2017	06-Nov-2017

Lab Sample No(s)	16433219	16433225	16433229	16433233	16433237	16433243	16433251	16433260	16433270	16433290
Customer Sample Ref.	SP2B-51	SP2B-52	SP2B-53	SP2B-54	SP2B-55	SP2B-56	SP2B-57	SP2B-58	SP2B-59	SP2B-60
AGS Ref.										
Depth	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
Alkali Metals by iCap-OES (Soil)	08-Nov-2017		08-Nov-2017		08-Nov-2017		06-Nov-2017		08-Nov-2017	
Ammonium Soil by Titration	06-Nov-2017	06-Nov-2017	06-Nov-2017	06-Nov-2017	06-Nov-2017	06-Nov-2017	06-Nov-2017	06-Nov-2017	06-Nov-2017	06-Nov-2017
Anions by Kone (soil)	06-Nov-2017		06-Nov-2017		06-Nov-2017		06-Nov-2017		06-Nov-2017	
Asbestos ID*	16-Nov-2017		16-Nov-2017		16-Nov-2017		16-Nov-2017		16-Nov-2017	
Cyanide Comp/Free/Total/Thiocyanate	07-Nov-2017	06-Nov-2017	07-Nov-2017	07-Nov-2017	07-Nov-2017	06-Nov-2017	06-Nov-2017	06-Nov-2017	06-Nov-2017	06-Nov-2017
EPH CWG (Aliphatic) GC (S)	07-Nov-2017	07-Nov-2017	07-Nov-2017	07-Nov-2017	07-Nov-2017	06-Nov-2017	06-Nov-2017	06-Nov-2017	06-Nov-2017	06-Nov-2017
EPH CWG (Aromatic) GC (S)	07-Nov-2017	07-Nov-2017	07-Nov-2017	07-Nov-2017	07-Nov-2017	06-Nov-2017	06-Nov-2017	06-Nov-2017	06-Nov-2017	06-Nov-2017
GRO by GC-FID (S)	06-Nov-2017	05-Nov-2017	06-Nov-2017	05-Nov-2017	04-Nov-2017	04-Nov-2017	04-Nov-2017	05-Nov-2017	06-Nov-2017	05-Nov-2017
Metals in solid samples by OES	07-Nov-2017	07-Nov-2017	07-Nov-2017	09-Nov-2017	07-Nov-2017	10-Nov-2017	07-Nov-2017	07-Nov-2017	07-Nov-2017	07-Nov-2017
PAH by GCMS	06-Nov-2017	06-Nov-2017	06-Nov-2017	06-Nov-2017	06-Nov-2017	06-Nov-2017	06-Nov-2017	06-Nov-2017	06-Nov-2017	06-Nov-2017
pH	03-Nov-2017	03-Nov-2017	03-Nov-2017	03-Nov-2017	03-Nov-2017	06-Nov-2017	03-Nov-2017	03-Nov-2017	06-Nov-2017	06-Nov-2017
Phenols by HPLC (S)	07-Nov-2017	07-Nov-2017	07-Nov-2017	07-Nov-2017	07-Nov-2017	06-Nov-2017	08-Nov-2017	07-Nov-2017	06-Nov-2017	06-Nov-2017
Sample description	02-Nov-2017	02-Nov-2017	02-Nov-2017	02-Nov-2017	02-Nov-2017	03-Nov-2017	03-Nov-2017	03-Nov-2017	03-Nov-2017	03-Nov-2017
Total Organic Carbon	09-Nov-2017	09-Nov-2017	09-Nov-2017	09-Nov-2017	09-Nov-2017	09-Nov-2017	10-Nov-2017	10-Nov-2017	10-Nov-2017	10-Nov-2017
Total Sulphate	06-Nov-2017		06-Nov-2017		06-Nov-2017		06-Nov-2017		06-Nov-2017	
Total Sulphur	07-Nov-2017		07-Nov-2017		07-Nov-2017		07-Nov-2017		07-Nov-2017	
TPH CWG GC (S)	07-Nov-2017	07-Nov-2017	07-Nov-2017	07-Nov-2017	07-Nov-2017	06-Nov-2017	06-Nov-2017	06-Nov-2017	06-Nov-2017	06-Nov-2017

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Ms Foster
ALS Life Sciences Limited
Units 7 & 8 Hawarden Business Park
Manor Road
Hawarden
Deeside CH5 3US

16 November 2017

Test Report: COV/1464005/2017

Dear Ms Foster

Analysis of your sample(s) submitted on 10 November 2017 is now complete and we have pleasure in enclosing the appropriate test report(s).

An invoice for the analysis carried out will be sent under separate cover.

Should you have any queries regarding this report(s) or any part of our service, please contact Customer Services on +44 (0)24 7642 1213 who will be happy to discuss your requirements.

If you would like to arrange any further analysis, please contact Customer Services. To arrange container delivery or sample collection, please call the Couriers Department directly on 024 7685 6562.

Thank you for using ALS Environmental Ltd and we look forward to receiving your next samples.

Yours Sincerely,

Signed:

Name: P. Patel

Title: Inorganic Team Leader

1314
Certificate No. GB97/10269
Environmental Management Systems
OHS 542058
This communication has been sent to you by ALS Environmental Ltd. Registered in England and Wales. Registration No.02148934. Registered Office: ALS Environmental Limited, Torrington Avenue, Coventry, CV4 9GU.

Report Summary

ANALYSED BY

Ms Carrie Foster
ALS Life Sciences Limited
Units 7 & 8 Hawarden Business Park
Manor Road
Hawarden
Deeside
CH5 3US

UKAS TESTING
1314
0897
4409

Date of Issue: **16 November 2017**

Report Number: **COV/1464005/2017** Issue **1**

This issue replaces all previous issues

Job Description: 2016 Analysis

Job Location: 171026-67

Number of Samples included in this report **15**

Job Received: **10 November 2017**

Number of Test Results included in this report **30**

Analysis Commenced: **14 November 2017**

Signed:

Name: **P. Patel** Date: **16 November 2017**

Title: **Inorganic Team Leader**

ALS Environmental Ltd was not responsible for sampling unless otherwise stated.

Information on the methods of analysis and performance characteristics are available on request.
Opinions and interpretations expressed herein are outside the scope of UKAS accreditation. The results relate only to the items tested.
Tests marked 'Not UKAS Accredited' in this Report/Certificate are not included in the UKAS Accreditation Schedule for our laboratory.

This communication has been sent to you by ALS Environmental Ltd. Registered in England and Wales. Registration No. 02148934. Registered Office: ALS Environmental Limited, Torrington Avenue, Coventry, CV4 9GU.
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Certificate of Analysis

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ALS

Report Number:	**COV/1464005/2017**	Issue	**1**
Laboratory Number:	**16577751**	Sample	**1** of **15**

Sample Source:	**ALS Life Sciences Limited**
Sample Point Description:	
Sample Description:	**16523905 SP2B-31**
Sample Matrix:	**Soil**
Sample Date/Time:	**25 October 2017**
Sample Received:	**10 November 2017**
Analysis Complete:	**15 November 2017**

Test Description	Result	Units	Analysis Date	Accreditation		Method
Description of Sample	Analyst Com	Text	14/11/2017	N	Cov	70
Asbestos Identification	Analyst Com	Text	14/11/2017	Y	Cov	70

Analyst Comments for 16577751: ASBESTOS COMMENTS Asbestos ID: Non Detected, Description of Sample: Soil

This issue replaces all previous issues
Accreditation Codes: Y = UKAS / ISO17025 Accredited, N = Not UKAS / ISO17025 Accredited, M = MCERTS.
Analysed at: Che = Chester(CH4 9EP), Ctd = Coatbridge(ML5 4FR), Cov = Coventry(CV4 9GU), Ott = Otterbourne(SO21 2SW), S = Subcontracted, Trb = Subcontracted to Trowbridge(BA14 0XD), Wak = Wakefield(WF5 9TG).
For Microbiological determinands 0 or ND=Not Detected, For Legionella ND=Not Detected in volume of sample filtered. The LOD for the Legionella analysis will increase where the volume analysed is <1000g (1g is approximately equivalent to 1ml for sample volume analysed).

Signed: P. Patel

Name: **P. Patel** Date: **16 November 2017**

Title: **Inorganic Team Leader**

Certificate of Analysis

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ALS

Report Number:	**COV/1464005/2017**	Issue	**1**
Laboratory Number:	**16577752**	Sample	**2** of **15**

Sample Source:	**ALS Life Sciences Limited**
Sample Point Description:	
Sample Description:	**16523857 SP2B-33**
Sample Matrix:	**Soil**
Sample Date/Time:	**25 October 2017**
Sample Received:	**10 November 2017**
Analysis Complete:	**15 November 2017**

Test Description	Result	Units	Analysis Date	Accreditation		Method
Description of Sample	Analyst Com	Text	14/11/2017	N	Cov	70
Asbestos Identification	Analyst Com	Text	14/11/2017	Y	Cov	70

Analyst Comments for 16577752: ASBESTOS COMMENTS Asbestos ID: Non Detected, Description of Sample: Soil

This issue replaces all previous issues
Accreditation Codes: Y = UKAS / ISO17025 Accredited, N = Not UKAS / ISO17025 Accredited, M = MCERTS.
Analysed at: Che = Chester(CH4 9EP), Ctd = Coatbridge(ML5 4FR), Cov = Coventry(CV4 9GU), Ott = Otterbourne(SO21 2SW), S = Subcontracted, Trb = Subcontracted to Trowbridge(BA14 0XD), Wak = Wakefield(WF5 9TG).
For Microbiological determinands 0 or ND=Not Detected, For Legionella ND=Not Detected in volume of sample filtered. The LOD for the Legionella analysis will increase where the volume analysed is <1000g (1g is approximately equivalent to 1ml for sample volume analysed).

Signed: P. Patel

Name: **P. Patel** Date: **16 November 2017**

Title: **Inorganic Team Leader**

Certificate of Analysis

ANALYSED BY

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4409

ALS

Report Number:	**COV/1464005/2017**	Issue	**1**
Laboratory Number:	**16577753**	Sample	**3** of **15**

Sample Source:	**ALS Life Sciences Limited**
Sample Point Description:	
Sample Description:	**16523893 SP2B-35**
Sample Matrix:	**Soil**
Sample Date/Time:	**25 October 2017**
Sample Received:	**10 November 2017**
Analysis Complete:	**15 November 2017**

Test Description	Result	Units	Analysis Date	Accreditation		Method
Description of Sample	Analyst Com	Text	14/11/2017	N	Cov	70
Asbestos Identification	Analyst Com	Text	14/11/2017	Y	Cov	70

Analyst Comments for 16577753: ASBESTOS COMMENTS Asbestos ID: Non Detected, Description of Sample: Soil

This issue replaces all previous issues
Accreditation Codes: Y = UKAS / ISO17025 Accredited, N = Not UKAS / ISO17025 Accredited, M = MCERTS.
Analysed at: Che = Chester(CH4 9EP), Ctd = Coatbridge(ML5 4FR), Cov = Coventry(CV4 9GU), Ott = Otterbourne(SO21 2SW), S = Subcontracted, Trb = Subcontracted to Trowbridge(BA14 0XD), Wak = Wakefield(WF5 9TG).
For Microbiological determinands 0 or ND=Not Detected, For Legionella ND=Not Detected in volume of sample filtered. The LOD for the Legionella analysis will increase where the volume analysed is <1000g (1g is approximately equivalent to 1ml for sample volume analysed).

Signed: P. Patel

Name: **P. Patel** Date: **16 November 2017**

Title: **Inorganic Team Leader**

Certificate of Analysis

ANALYSED BY

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4409

ALS

Report Number:	**COV/1464005/2017**	Issue	**1**
Laboratory Number:	**16577754**	Sample	**4** of **15**

Sample Source:	**ALS Life Sciences Limited**
Sample Point Description:	
Sample Description:	**16523935 SP2B-37**
Sample Matrix:	**Soil**
Sample Date/Time:	**25 October 2017**
Sample Received:	**10 November 2017**
Analysis Complete:	**15 November 2017**

Test Description	Result	Units	Analysis Date	Accreditation		Method
Description of Sample	Analyst Com	Text	14/11/2017	N	Cov	70
Asbestos Identification	Analyst Com	Text	14/11/2017	Y	Cov	70

Analyst Comments for 16577754: ASBESTOS COMMENTS Asbestos ID: Non Detected, Description of Sample: Soil

This issue replaces all previous issues
Accreditation Codes: Y = UKAS / ISO17025 Accredited, N = Not UKAS / ISO17025 Accredited, M = MCERTS.
Analysed at: Che = Chester(CH4 9EP), Ctd = Coatbridge(ML5 4FR), Cov = Coventry(CV4 9GU), Ott = Otterbourne(SO21 2SW), S = Subcontracted, Trb = Subcontracted to Trowbridge(BA14 0XD), Wak = Wakefield(WF5 9TG).
For Microbiological determinands 0 or ND=Not Detected, For Legionella ND=Not Detected in volume of sample filtered. The LOD for the Legionella analysis will increase where the volume analysed is <1000g (1g is approximately equivalent to 1ml for sample volume analysed).

Signed: P. Patel

Name: **P. Patel** Date: **16 November 2017**

Title: **Inorganic Team Leader**

Certificate of Analysis

ANALYSED BY

UKAS TESTING
1314
0897
4409

ALS

Report Number:	**COV/1464005/2017**	Issue	**1**
Laboratory Number:	**16577755**	Sample	**5** of **15**

Sample Source:	**ALS Life Sciences Limited**
Sample Point Description:	
Sample Description:	**16523945 SP2B-39**
Sample Matrix:	**Soil**
Sample Date/Time:	**25 October 2017**
Sample Received:	**10 November 2017**
Analysis Complete:	**15 November 2017**

Test Description	Result	Units	Analysis Date	Accreditation		Method
Description of Sample	Analyst Com	Text	14/11/2017	N	Cov	70
Asbestos Identification	Analyst Com	Text	14/11/2017	Y	Cov	70

Analyst Comments for 16577755: ASBESTOS COMMENTS Asbestos ID: Non Detected, Description of Sample: Soil

This issue replaces all previous issues
Accreditation Codes: Y = UKAS / ISO17025 Accredited, N = Not UKAS / ISO17025 Accredited, M = MCERTS.
Analysed at: Che = Chester(CH4 9EP), Ctd = Coatbridge(ML5 4FR), Cov = Coventry(CV4 9GU), Ott = Otterbourne(SO21 2SW), S = Subcontracted, Trb = Subcontracted to Trowbridge(BA14 0XD), Wak = Wakefield(WF5 9TG).
For Microbiological determinands 0 or ND=Not Detected, For Legionella ND=Not Detected in volume of sample filtered. The LOD for the Legionella analysis will increase where the volume analysed is <1000g (1g is approximately equivalent to 1ml for sample volume analysed).

Signed: P. Patel

Name: **P. Patel** Date: **16 November 2017**

Title: **Inorganic Team Leader**

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Report Number:	**COV/1464005/2017**	Issue	**1**
Laboratory Number:	**16577756**	Sample	**6** of **15**

Sample Source:	**ALS Life Sciences Limited**
Sample Point Description:	
Sample Description:	**16523596 SP2B-41**
Sample Matrix:	**Soil**
Sample Date/Time:	**25 October 2017**
Sample Received:	**10 November 2017**
Analysis Complete:	**15 November 2017**

Test Description	Result	Units	Analysis Date	Accreditation		Method
Description of Sample	Analyst Com	Text	14/11/2017	N	Cov	70
Asbestos Identification	Analyst Com	Text	14/11/2017	Y	Cov	70

Analyst Comments for 16577756: ASBESTOS COMMENTS Asbestos ID: Chrysotile, Description of Sample: Fibres in soil

This issue replaces all previous issues
Accreditation Codes: Y = UKAS / ISO17025 Accredited, N = Not UKAS / ISO17025 Accredited, M = MCERTS.
Analysed at: Che = Chester(CH4 9EP), Ctd = Coatbridge(ML5 4FR), Cov = Coventry(CV4 9GU), Ott = Otterbourne(SO21 2SW), S = Subcontracted, Trb = Subcontracted to Trowbridge(BA14 0XD), Wak = Wakefield(WF5 9TG).
For Microbiological determinands 0 or ND=Not Detected, For Legionella ND=Not Detected in volume of sample filtered. The LOD for the Legionella analysis will increase where the volume analysed is <1000g (1g is approximately equivalent to 1ml for sample volume analysed).

Signed: P. Patel

Name: **P. Patel** Date: **16 November 2017**

Title: **Inorganic Team Leader**

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Report Number:	**COV/1464005/2017**	Issue	**1**
Laboratory Number:	**16577757**	Sample	**7** of **15**

Sample Source:	**ALS Life Sciences Limited**
Sample Point Description:	
Sample Description:	**16523584 SP2B-43**
Sample Matrix:	**Soil**
Sample Date/Time:	**25 October 2017**
Sample Received:	**10 November 2017**
Analysis Complete:	**15 November 2017**

Test Description	Result	Units	Analysis Date	Accreditation		Method
Description of Sample	Analyst Com	Text	14/11/2017	N	Cov	70
Asbestos Identification	Analyst Com	Text	14/11/2017	Y	Cov	70

Analyst Comments for 16577757: ASBESTOS COMMENTS Asbestos ID: Non Detected, Description of Sample: Soil

This issue replaces all previous issues
Accreditation Codes: Y = UKAS / ISO17025 Accredited, N = Not UKAS / ISO17025 Accredited, M = MCERTS.
Analysed at: Che = Chester(CH4 9EP), Ctd = Coatbridge(ML5 4FR), Cov = Coventry(CV4 9GU), Ott = Otterbourne(SO21 2SW), S = Subcontracted, Trb = Subcontracted to Trowbridge(BA14 0XD), Wak = Wakefield(WF5 9TG).
For Microbiological determinands 0 or ND=Not Detected, For Legionella ND=Not Detected in volume of sample filtered. The LOD for the Legionella analysis will increase where the volume analysed is <1000g (1g is approximately equivalent to 1ml for sample volume analysed).

Signed: P. Patel

Name: **P. Patel** Date: **16 November 2017**

Title: **Inorganic Team Leader**

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Report Number:	**COV/1464005/2017**	Issue	**1**
Laboratory Number:	**16577758**	Sample	**8** of **15**

Sample Source:	**ALS Life Sciences Limited**
Sample Point Description:	
Sample Description:	**16523971 SP2B-45**
Sample Matrix:	**Soil**
Sample Date/Time:	**25 October 2017**
Sample Received:	**10 November 2017**
Analysis Complete:	**15 November 2017**

Test Description	Result	Units	Analysis Date	Accreditation	Method
Description of Sample	Analyst Com	Text	14/11/2017	N Cov	70
Asbestos Identification	Analyst Com	Text	14/11/2017	Y Cov	70

Analyst Comments for 16577758: ASBESTOS COMMENTS Asbestos ID: Non Detected, Description of Sample: Soil

This issue replaces all previous issues
Accreditation Codes: Y = UKAS / ISO17025 Accredited, N = Not UKAS / ISO17025 Accredited, M = MCERTS.
Analysed at: Che = Chester(CH4 9EP), Ctd = Coatbridge(ML5 4FR), Cov = Coventry(CV4 9GU), Ott = Otterbourne(SO21 2SW), S = Subcontracted, Trb = Subcontracted to Trowbridge(BA14 0XD), Wak = Wakefield(WF5 9TG).
For Microbiological determinands 0 or ND=Not Detected, For Legionella ND=Not Detected in volume of sample filtered. The LOD for the Legionella analysis will increase where the volume analysed is <1000g (1g is approximately equivalent to 1ml for sample volume analysed).

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Report Number:	**COV/1464005/2017**	Issue	**1**
Laboratory Number:	**16577759**	Sample	**9** of **15**

Sample Source:	**ALS Life Sciences Limited**
Sample Point Description:	
Sample Description:	**16524006 SP2B-47**
Sample Matrix:	**Soil**
Sample Date/Time:	**25 October 2017**
Sample Received:	**10 November 2017**
Analysis Complete:	**15 November 2017**

Test Description	Result	Units	Analysis Date	Accreditation	Method
Description of Sample	Analyst Com	Text	14/11/2017	N Cov	70
Asbestos Identification	Analyst Com	Text	14/11/2017	Y Cov	70

Analyst Comments for 16577759: ASBESTOS COMMENTS Asbestos ID: Non Detected, Description of Sample: Soil

This issue replaces all previous issues
Accreditation Codes: Y = UKAS / ISO17025 Accredited, N = Not UKAS / ISO17025 Accredited, M = MCERTS.
Analysed at: Che = Chester(CH4 9EP), Ctd = Coatbridge(ML5 4FR), Cov = Coventry(CV4 9GU), Ott = Otterbourne(SO21 2SW), S = Subcontracted, Trb = Subcontracted to Trowbridge(BA14 0XD), Wak = Wakefield(WF5 9TG).
For Microbiological determinands 0 or ND=Not Detected, For Legionella ND=Not Detected in volume of sample filtered. The LOD for the Legionella analysis will increase where the volume analysed is <1000g (1g is approximately equivalent to 1ml for sample volume analysed).

Signed: P. Patel

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Report Number:	**COV/1464005/2017**	Issue	**1**
Laboratory Number:	**16577760**	Sample	**10** of **15**

Sample Source:	**ALS Life Sciences Limited**
Sample Point Description:	
Sample Description:	**16523605 SP2B-49**
Sample Matrix:	**Soil**
Sample Date/Time:	**25 October 2017**
Sample Received:	**10 November 2017**
Analysis Complete:	**15 November 2017**

Test Description	Result	Units	Analysis Date	Accreditation		Method
Description of Sample	Analyst Com	Text	14/11/2017	N	Cov	70
Asbestos Identification	Analyst Com	Text	14/11/2017	Y	Cov	70

Analyst Comments for 16577760: ASBESTOS COMMENTS Asbestos ID: Non Detected, Description of Sample: Soil

This issue replaces all previous issues
Accreditation Codes: Y = UKAS / ISO17025 Accredited, N = Not UKAS / ISO17025 Accredited, M = MCERTS.
Analysed at: Che = Chester(CH4 9EP), Ctd = Coatbridge(ML5 4FR), Cov = Coventry(CV4 9GU), Ott = Otterbourne(SO21 2SW), S = Subcontracted, Trb = Subcontracted to Trowbridge(BA14 0XD), Wak = Wakefield(WF5 9TG).
For Microbiological determinands 0 or ND=Not Detected, For Legionella ND=Not Detected in volume of sample filtered. The LOD for the Legionella analysis will increase where the volume analysed is <1000g (1g is approximately equivalent to 1ml for sample volume analysed).

Signed: P. Patel

Name: **P. Patel** Date: **16 November 2017**

Title: **Inorganic Team Leader**

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Report Number:	**COV/1464005/2017**	Issue	**1**
Laboratory Number:	**16577761**	Sample	**11** of **15**

Sample Source:	**ALS Life Sciences Limited**
Sample Point Description:	
Sample Description:	**16523319 SP2B-51**
Sample Matrix:	**Soil**
Sample Date/Time:	**25 October 2017**
Sample Received:	**10 November 2017**
Analysis Complete:	**15 November 2017**

Test Description	Result	Units	Analysis Date	Accreditation		Method
Description of Sample	Analyst Com	Text	14/11/2017	N	Cov	70
Asbestos Identification	Analyst Com	Text	14/11/2017	Y	Cov	70

Analyst Comments for 16577761: ASBESTOS COMMENTS Asbestos ID: Amosite Chrysotile, Description of Sample: Chrysotile in bitumen, Amosite loose in soil.

This issue replaces all previous issues
Accreditation Codes: Y = UKAS / ISO17025 Accredited, N = Not UKAS / ISO17025 Accredited, M = MCERTS.
Analysed at: Che = Chester(CH4 9EP), Ctd = Coatbridge(ML5 4FR), Cov = Coventry(CV4 9GU), Ott = Otterbourne(SO21 2SW), S = Subcontracted, Trb = Subcontracted to Trowbridge(BA14 0XD), Wak = Wakefield(WF5 9TG).
For Microbiological determinands 0 or ND=Not Detected, For Legionella ND=Not Detected in volume of sample filtered. The LOD for the Legionella analysis will increase where the volume analysed is <1000g (1g is approximately equivalent to 1ml for sample volume analysed).

Signed: P. Patel

Name: **P. Patel** Date: **16 November 2017**

Title: **Inorganic Team Leader**

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Report Number:	**COV/1464005/2017**	Issue	**1**
Laboratory Number:	**16577762**	Sample	**12** of **15**
Sample Source:	**ALS Life Sciences Limited**		
Sample Point Description:			
Sample Description:	**16523348 SP2B-53**		
Sample Matrix:	**Soil**		
Sample Date/Time:	**25 October 2017**		
Sample Received:	**10 November 2017**		
Analysis Complete:	**15 November 2017**		

Test Description	Result	Units	Analysis Date	Accreditation	Method
Description of Sample	Analyst Com	Text	14/11/2017	N Cov	70
Asbestos Identification	Analyst Com	Text	14/11/2017	Y Cov	70

Analyst Comments for 16577762: ASBESTOS COMMENTS Asbestos ID: Non Detected, Description of Sample: Soil

This issue replaces all previous issues
Accreditation Codes: Y = UKAS / ISO17025 Accredited, N = Not UKAS / ISO17025 Accredited, M = MCERTS.
Analysed at: Che = Chester(CH4 9EP), Ctd = Coatbridge(ML5 4FR), Cov = Coventry(CV4 9GU), Ott = Otterbourne(SO21 2SW), S = Subcontracted, Trb = Subcontracted to Trowbridge(BA14 0XD), Wak = Wakefield(WF5 9TG).
For Microbiological determinands 0 or ND=Not Detected, For Legionella ND=Not Detected in volume of sample filtered. The LOD for the Legionella analysis will increase where the volume analysed is <1000g (1g is approximately equivalent to 1ml for sample volume analysed).

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Name: **P. Patel** Date: **16 November 2017**

Title: **Inorganic Team Leader**

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Report Number:	**COV/1464005/2017**	Issue	**1**
Laboratory Number:	**16577763**	Sample	**13** of **15**

Sample Source:	**ALS Life Sciences Limited**
Sample Point Description:	
Sample Description:	**16523327 SP2B-55**
Sample Matrix:	**Soil**
Sample Date/Time:	**25 October 2017**
Sample Received:	**10 November 2017**
Analysis Complete:	**15 November 2017**

Test Description	Result	Units	Analysis Date	Accreditation	Method
Description of Sample	Analyst Com	Text	14/11/2017	N Cov	70
Asbestos Identification	Analyst Com	Text	14/11/2017	Y Cov	70

Analyst Comments for 16577763: ASBESTOS COMMENTS Asbestos ID: Non Detected, Description of Sample: Soil

This issue replaces all previous issues
Accreditation Codes: Y = UKAS / ISO17025 Accredited, N = Not UKAS / ISO17025 Accredited, M = MCERTS.
Analysed at: Che = Chester(CH4 9EP), Ctd = Coatbridge(ML5 4FR), Cov = Coventry(CV4 9GU), Ott = Otterbourne(SO21 2SW), S = Subcontracted, Trb = Subcontracted to Trowbridge(BA14 0XD), Wak = Wakefield(WF5 9TG).
For Microbiological determinands 0 or ND=Not Detected, For Legionella ND=Not Detected in volume of sample filtered. The LOD for the Legionella analysis will increase where the volume analysed is <1000g (1g is approximately equivalent to 1ml for sample volume analysed).

Signed: P. Patel

Name: **P. Patel** Date: **16 November 2017**

Title: **Inorganic Team Leader**

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Report Number:	**COV/1464005/2017**	Issue	**1**
Laboratory Number:	**16577764**	Sample	**14** of **15**

Sample Source:	**ALS Life Sciences Limited**
Sample Point Description:	
Sample Description:	**16523883 SP2B-57**
Sample Matrix:	**Soil**
Sample Date/Time:	**25 October 2017**
Sample Received:	**10 November 2017**
Analysis Complete:	**15 November 2017**

Test Description	Result	Units	Analysis Date	Accreditation		Method
Description of Sample	Analyst Com	Text	14/11/2017	N	Cov	70
Asbestos Identification	Analyst Com	Text	14/11/2017	Y	Cov	70

Analyst Comments for 16577764: ASBESTOS COMMENTS Asbestos ID: Non Detected, Description of Sample: Soil

This issue replaces all previous issues
Accreditation Codes: Y = UKAS / ISO17025 Accredited, N = Not UKAS / ISO17025 Accredited, M = MCERTS.
Analysed at: Che = Chester(CH4 9EP), Ctd = Coatbridge(ML5 4FR), Cov = Coventry(CV4 9GU), Ott = Otterbourne(SO21 2SW), S = Subcontracted, Trb = Subcontracted to Trowbridge(BA14 0XD), Wak = Wakefield(WF5 9TG).
For Microbiological determinands 0 or ND=Not Detected, For Legionella ND=Not Detected in volume of sample filtered. The LOD for the Legionella analysis will increase where the volume analysed is <1000g (1g is approximately equivalent to 1ml for sample volume analysed).

Signed: P. Patel

Name: **P. Patel** Date: **16 November 2017**

Title: **Inorganic Team Leader**

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ALS

Report Number:	**COV/1464005/2017**	Issue	**1**
Laboratory Number:	**16577765**	Sample	**15** of **15**

Sample Source:	**ALS Life Sciences Limited**
Sample Point Description:	
Sample Description:	**16523992 SP2B-59**
Sample Matrix:	**Soil**
Sample Date/Time:	**25 October 2017**
Sample Received:	**10 November 2017**
Analysis Complete:	**15 November 2017**

Test Description	Result	Units	Analysis Date	Accreditation		Method
Description of Sample	Analyst Com	Text	14/11/2017	N	Cov	70
Asbestos Identification	Analyst Com	Text	14/11/2017	Y	Cov	70

Analyst Comments for 16577765: ASBESTOS COMMENTS Asbestos ID: Non Detected, Description of Sample: Soil

This issue replaces all previous issues
Accreditation Codes: Y = UKAS / ISO17025 Accredited, N = Not UKAS / ISO17025 Accredited, M = MCERTS.
Analysed at: Che = Chester(CH4 9EP), Ctd = Coatbridge(ML5 4FR), Cov = Coventry(CV4 9GU), Ott = Otterbourne(SO21 2SW), S = Subcontracted, Trb = Subcontracted to Trowbridge(BA14 0XD), Wak = Wakefield(WF5 9TG).
For Microbiological determinands 0 or ND=Not Detected, For Legionella ND=Not Detected in volume of sample filtered. The LOD for the Legionella analysis will increase where the volume analysed is <1000g (1g is approximately equivalent to 1ml for sample volume analysed).

Signed: P. Patel

Name: **P. Patel** Date: **16 November 2017**

Title: **Inorganic Team Leader**

ANALYST COMMENTS FOR REPORT COV/1464005/2017

Issue 1 This issue replaces all previous issues

Date of Issue: **16 November 2017**

Sample No	Analysis Comments
16577751	ASBESTOS COMMENTS Asbestos ID: Non Detected, Description of Sample: Soil
16577752	ASBESTOS COMMENTS Asbestos ID: Non Detected, Description of Sample: Soil
16577753	ASBESTOS COMMENTS Asbestos ID: Non Detected, Description of Sample: Soil
16577754	ASBESTOS COMMENTS Asbestos ID: Non Detected, Description of Sample: Soil
16577755	ASBESTOS COMMENTS Asbestos ID: Non Detected, Description of Sample: Soil
16577756	ASBESTOS COMMENTS Asbestos ID: Chrysotile, Description of Sample: Fibres in soil
16577757	ASBESTOS COMMENTS Asbestos ID: Non Detected, Description of Sample: Soil
16577758	ASBESTOS COMMENTS Asbestos ID: Non Detected, Description of Sample: Soil
16577759	ASBESTOS COMMENTS Asbestos ID: Non Detected, Description of Sample: Soil
16577760	ASBESTOS COMMENTS Asbestos ID: Non Detected, Description of Sample: Soil
16577761	ASBESTOS COMMENTS Asbestos ID: Amosite Chrysotile, Description of Sample: Chrysotile in bitumen, Amosite loose in soil.
16577762	ASBESTOS COMMENTS Asbestos ID: Non Detected, Description of Sample: Soil
16577763	ASBESTOS COMMENTS Asbestos ID: Non Detected, Description of Sample: Soil
16577764	ASBESTOS COMMENTS Asbestos ID: Non Detected, Description of Sample: Soil
16577765	ASBESTOS COMMENTS Asbestos ID: Non Detected, Description of Sample: Soil

Signed:

Name: **P. Patel** Date: **16 November 2017**

Title: **Inorganic Team Leader**

DETERMINAND COMMENTS FOR REPORT COV/1464005/2017

ISSUE 1

This issue replaces all previous issues

Date of Issue: 16 November 2017

Sample No	Description	Determinand	Comments
16577751	16523905 SP2B-31	Asbestos Identification	{/*}Non Detected{*/}
16577751	16523905 SP2B-31	Description of Sample	{/*}Soil{*/}
16577752	16523857 SP2B-33	Asbestos Identification	{/*}Non Detected{*/}
16577752	16523857 SP2B-33	Description of Sample	{/*}Soil{*/}
16577753	16523893 SP2B-35	Asbestos Identification	{/*}Non Detected{*/}
16577753	16523893 SP2B-35	Description of Sample	{/*}Soil{*/}
16577754	16523935 SP2B-37	Asbestos Identification	{/*}Non Detected{*/}
16577754	16523935 SP2B-37	Description of Sample	{/*}Soil{*/}
16577755	16523945 SP2B-39	Asbestos Identification	{/*}Non Detected{*/}
16577755	16523945 SP2B-39	Description of Sample	{/*}Soil{*/}
16577756	16523596 SP2B-41	Asbestos Identification	{/*}Chrysotile{*/}
16577756	16523596 SP2B-41	Description of Sample	{/*}Fibres in soil{*/}
16577757	16523584 SP2B-43	Asbestos Identification	{/*}Non Detected{*/}
16577757	16523584 SP2B-43	Description of Sample	{/*}Soil{*/}
16577758	16523971 SP2B-45	Asbestos Identification	{/*}Non Detected{*/}
16577758	16523971 SP2B-45	Description of Sample	{/*}Soil{*/}
16577759	16524006 SP2B-47	Asbestos Identification	{/*}Non Detected{*/}
16577759	16524006 SP2B-47	Description of Sample	{/*}Soil{*/}
16577760	16523605 SP2B-49	Asbestos Identification	{/*}Non Detected{*/}
16577760	16523605 SP2B-49	Description of Sample	{/*}Soil{*/}
16577761	16523319 SP2B-51	Asbestos Identification	{/*}Amosite Chrysotile{*/}
16577761	16523319 SP2B-51	Description of Sample	{/*}Chrysotile in bitumen, Amosite loose in soil.{*/}
16577762	16523348 SP2B-53	Asbestos Identification	{/*}Non Detected{*/}
16577762	16523348 SP2B-53	Description of Sample	{/*}Soil{*/}
16577763	16523327 SP2B-55	Asbestos Identification	{/*}Non Detected{*/}
16577763	16523327 SP2B-55	Description of Sample	{/*}Soil{*/}
16577764	16523883 SP2B-57	Asbestos Identification	{/*}Non Detected{*/}
16577764	16523883 SP2B-57	Description of Sample	{/*}Soil{*/}
16577765	16523992 SP2B-59	Asbestos Identification	{/*}Non Detected{*/}
16577765	16523992 SP2B-59	Description of Sample	{/*}Soil{*/}

Signed:

Name: **P. Patel** Date: **16 November 2017**

Title: **Inorganic Team Leader**

Appendix General

1. Results are expressed on a dry weight basis (dried at 35ºC) for all soil analyses except for the following: NRA and CEN Leach tests, flash point LOI, pH, ammonium as NH4 by the BRE method, VOC TICs and SVOC TICs.

2. Samples will be run in duplicate upon request, but an additional charge may be incurred.

3. If sufficient sample is received a sub sample will be retained free of charge for 30 days after analysis is completed (e-mailed) for all sample types unless the sample is destroyed on testing. The prepared soil sub sample that is analysed for asbestos will be retained for a period of 6 months after the analysis date. All bulk samples will be retained for a period of 6 months after the analysis date. All samples received and not scheduled will be disposed of one month after the date of receipt unless we are instructed to the contrary. Once the initial period has expired, a storage charge will be applied for each month or part thereof until the client cancels the request for sample storage. ALS reserve the right to charge for samples received and stored but not analysed.

4. With respect to turnaround, we will always endeavour to meet client requirements wherever possible, but turnaround times cannot be absolutely guaranteed due to so many variables beyond our control.

5. We take responsibility for any test performed by sub-contractors (marked with an asterisk). We endeavour to use UKAS/MCERTS Accredited Laboratories, who either complete a quality questionnaire or are audited by ourselves. For some determinands there are no UKAS/MCERTS Accredited Laboratories, in this instance a laboratory with a known track record will be utilised.

6. When requested, the individual sub sample scheduled will be analysed in house for the presence of asbestos fibres and asbestos containing material by our documented in house method TM048 based on HSG 248 (2005), which is accredited to ISO17025. If a specific asbestos fibre type is not found this will be reported as “Not detected”. If no asbestos fibre types are found all will be reported as “Not detected” and the sub sample analysed deemed to be clear of asbestos. If an asbestos fibre type is found it will be reported as detected (for each fibre type found). Testing can be carried out on asbestos positive samples, but, due to Health and Safety considerations, may be replaced by alternative tests or reported as No Determination Possible (NDP). The quantity of asbestos present is not determined unless specifically requested.

7. If no separate volatile sample is supplied by the client, or if a headspace or sediment is present in the volatile sample, the integrity of the data may be compromised. This will be flagged up as an invalid VOC on the test schedule and the result marked as deviating on the test certificate.

8. If appropriate preserved bottles are not received preservation will take place on receipt. However, the integrity of the data may be compromised.

9. NDP - No determination possible due to insufficient/unsuitable sample.

10. Metals in water are performed on a filtered sample, and therefore represent dissolved metals - total metals must be requested separately.

11. Results relate only to the items tested.

12. LoDs (Limit of Detection) for wet tests reported on a dry weight basis are not corrected for moisture content.

13. **Surrogate recoveries** - Surrogates are added to your sample to monitor recovery of the test requested. A % recovery is reported, results are not corrected for the recovery measured. Typical recoveries for organics tests are 70-130%, they are generally wider for volatiles analysis, 50-150%. Recoveries in soils are affected by organic rich or clay rich matrices. Waters can be affected by remediation fluids or high amounts of sediment. Test results are only ever reported if all of the associated quality checks pass; it is assumed that all recoveries outside of the values above are due to matrix affect.

14. **Product analyses** - Organic analyses on products can only be semi-quantitative due to the matrix effects and high dilution factors employed.

15. Phenols monohydric by HPLC include phenol, cresols (2-Methylphenol, 3-Methylphenol and 4-Methylphenol) and Xylenols (2,3 Dimethylphenol, 2,4 Dimethylphenol, 2,5 Dimethylphenol, 2,6 Dimethylphenol, 3,4 Dimethyphenol, 3,5 Dimethylphenol).

16. Total of 5 speciated phenols by HPLC includes Phenol, 2,3,5-Trimethyl Phenol, 2-Isopropylphenol, Cresols and Xylenols (as detailed in 15).

17. Stones/debris are not routinely removed. We always endeavour to take a representative sub sample from the received sample.

18. In certain circumstances the method detection limit may be elevated due to the sample being outside the calibration range. Other factors that may contribute to this include possible interferences. In both cases the sample would be diluted which would cause the method detection limit to be raised.

19. Mercury results quoted on soils will not include volatile mercury as the analysis is performed on a dried and crushed sample.

20. For leachate preparations other than Zero Headspace Extraction (ZHE) volatile loss may occur.

21. For the BSEN 12457-3 two batch process to allow the cumulative release to be calculated, the volume of the leachate produced is measured and filtered for all tests. We therefore cannot carry out any unfiltered analysis. The tests affected include volatiles GCFID/GCMS and all subcontracted analysis.

22. We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample. Other coarse granular material such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

23. Analysis and identification of specific compounds using GCFID is by retention time only, and we routinely calibrate and quantify for benzene, toluene, ethylbenzenes and xylenes (BTEX). For total volatiles in the C5-C12 range, the total area of the chromatogram is integrated and expressed as ug/kg or ug/l. Although this analysis is commonly used for the quantification of gasoline range organics (GRO), the system will also detect other compounds such as chlorinated solvents, and this may lead to a falsely high result with respect to hydrocarbons only. It is not possible to specifically identify these non-hydrocarbons, as standards are not routinely run for any other compounds, and for more definitive identification, volatiles by GCMS should be utilised.

24. **Tentatively Identified Compounds (TICs)** are non-target peaks in VOC and SVOC analysis. All non-target peaks detected with a concentration above the LoD are subjected to a mass spectral library search. Non-target peaks with a library search confidence of >75% are reported based on the best mass spectral library match. When a non-target peak with a library search confidence of <75% is detected it is reported as “mixed hydrocarbons”. Non-target compounds identified from the scan data are semi-quantified relative to one of the deuterated internal standards, under the same chromatographic conditions as the target compounds. This result is reported as a semi-quantitative value and reported as Tentatively Identified Compounds (TICs). TICs are outside the scope of UKAS accreditation and are not moisture corrected.

Sample Deviations

If a sample is classed as deviated then the associated results may be compromised.

1	**Container with Headspace provided for volatiles analysis**
2	**Incorrect container received**
3	**Deviation from method**
4	**Holding time exceeded before sample received**
5	**Samples exceeded holding time before presevation was performed**
§	**Sampled on date not provided**
♦	**Sample holding time exceeded in laboratory**
@	**Sample holding time exceeded due to sampled on date**
&	**Sample Holding Time exceeded - Late arrival of instructions.**

Asbestos

Identification of Asbestos in Bulk Materials & Soils

The results for identification of asbestos in bulk materials are obtained from supplied bulk materials which have been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

The results for identification of asbestos in soils are obtained from a homogenised sub sample which has been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

Asbestos Type	Common Name
Chrysotile	White Asbestos
Amosite	Brown Asbestos
Crocidolite	Blue Asbestos
Fibrous Actinolite	-
Fibrous Anthophyllite	-
Fibrous Tremolite	-

Visual Estimation Of Fibre Content

Estimation of fibre content is not permitted as part of our UKAS accredited test other than: - Trace - Where only one or two asbestos fibres were identified.

Further guidance on typical asbestos fibre content of manufactured products can be found in HSG 264.

The identification of asbestos containing materials and soils falls within our schedule of tests for which we hold UKAS accreditation, however opinions, interpretations and all other information contained in the report are outside the scope of UKAS accreditation.

Unit 7-8 Hawarden Business Park
Manor Road (off Manor Lane)
Hawarden
Deeside
CH5 3US
Tel: (01244) 528700
Fax: (01244) 528701
email: hawardencustomerservices@alsglobal.com
Website: www.alsenvironmental.co.uk

Atkins Global Ltd
Project Jonah site office
Llan Coed House
Suite 24
Coed Darcy
Llandarcy
SA10 6HJ

Attention: John Fitzgerald

CERTIFICATE OF ANALYSIS

Date:	10 January 2018
Customer:	H_ATKINS_LDC
Sample Delivery Group (SDG):	171125-14
Your Reference:	
Location:	Llanwern
Report No:	439663

This report has been revised and directly supersedes 437932 in its entirety.

We received 19 samples on Saturday November 25, 2017 and 19 of these samples were scheduled for analysis which was completed on Wednesday January 10, 2018. Accredited laboratory tests are defined within the report, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation.

Should this report require incorporation into client reports, it must be used in its entirety and not simply with the data sections alone.

Chemical testing (unless subcontracted) performed at ALS Environmental Hawarden (Method codes TM) or ALS Environmental Aberdeen (Method codes S).

Approved By:

Sonia McWhan

Operations Manager

ALS Life Sciences Limited. Registered Office: Units 7 & 8 Hawarden Business Park, Manor Road, Hawarden, Deeside, CH5 3US. Registered in England and Wales No. 4057291.

CERTIFICATE OF ANALYSIS

SDG:	171125-14	**Client Reference:**		**Report Number:**	439663
Location:	Llanwern	**Order Number:**	LLA372	**Superseded Report:**	437932

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
16632886	CBPU4_5-33		0.00 - 0.00	24/11/2017
16632969	CBPU4_5-51		0.00 - 0.00	24/11/2017
16632975	CBPU4_5-52		0.00 - 0.00	24/11/2017
16632982	CBPU4_5-53		0.00 - 0.00	24/11/2017
16632988	CBPU4_5-54		0.00 - 0.00	24/11/2017
16632996	CBPU4_5-55		0.00 - 0.00	24/11/2017
16633005	CBPU4_5-56		0.00 - 0.00	24/11/2017
16633011	CBPU4_5-57		0.00 - 0.00	24/11/2017
16633018	CBPU4_5-58		0.00 - 0.00	24/11/2017
16632897	CBPU4_5-59		0.00 - 0.00	24/11/2017
16632903	CBPU4_5-60		0.00 - 0.00	24/11/2017
16632910	CBPU4_5-61		0.00 - 0.00	24/11/2017
16632918	CBPU4_5-62		0.00 - 0.00	24/11/2017
16632926	CBPU4_5-63		0.00 - 0.00	24/11/2017
16632933	CBPU4_5-64		0.00 - 0.00	24/11/2017
16632940	CBPU4_5-65		0.00 - 0.00	24/11/2017
16632948	CBPU4_5-66		0.00 - 0.00	24/11/2017
16632955	CBPU4_5-67		0.00 - 0.00	24/11/2017
16632962	CBPU4_5-68		0.00 - 0.00	24/11/2017

Maximum Sample/Coolbox Temperature (°C) : **4.6**

ISO5667-3 Water quality - Sampling - Part3 -

During Transportation samples shall be stored in a cooling device capable of maintaining a temperature of (5±3)°C.

ALS have data which show that a cool box with 4 frozen icepacks is capable of maintaining pre-chilled samples at a temperature of (5±3)°C for a period of up to 24hrs.

Only received samples which have had analysis scheduled will be shown on the following pages.

Validated

CERTIFICATE OF ANALYSIS

SDG:	171125-14	**Client Reference:**		**Report Number:**	439663
Location:	Llanwern	**Order Number:**	LLA372	**Superseded Report:**	437932

Results Legend

X Test

N No Determination Possible

Sample Types -
S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

Lab Sample No(s)			16632886			16632969			16632975			16632982			16632988			16632996			16633005	16633011
Customer Sample Reference			CBPU4_5-33			CBPU4_5-51			CBPU4_5-52			CBPU4_5-53			CBPU4_5-54			CBPU4_5-55			CBPU4_5-56	CBPU4_5-57
AGS Reference																						
Depth (m)			0.00 - 0.00			0.00 - 0.00			0.00 - 0.00			0.00 - 0.00			0.00 - 0.00			0.00 - 0.00			0.00 - 0.00	0.00 - 0.00
Container			250g Amber Jar (ALE210)	400g Tub (ALE214)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)		250g Amber Jar (ALE210)	400g Tub (ALE214)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)		250g Amber Jar (ALE210)	400g Tub (ALE214)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)		250g Amber Jar (ALE210)	400g Tub (ALE214)	60g VOC (ALE215)	250g Amber Jar (ALE210)
Sample Type			S	S	S	S	S		S	S	S	S	S		S	S	S	S	S		S	S	S	S
Alkali Metals by iCap-OES (Soil)	All	NDPs: 0 Tests: 10	X						X						X						X			
Ammonium Soil by Titration	All	NDPs: 0 Tests: 19	X			X			X			X			X			X			X			X
Anions by Kone (soil)	All	NDPs: 0 Tests: 10	X						X						X						X			
Asbestos ID*	All	NDPs: 0 Tests: 10		X						X						X						X		
Asbestos Quantification - Full	All	NDPs: 0 Tests: 3								X														
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 19	X			X			X			X			X			X			X			X
EPH CWG (Aliphatic) GC (S)	All	NDPs: 0 Tests: 19	X			X			X			X			X			X			X			X
EPH CWG (Aromatic) GC (S)	All	NDPs: 0 Tests: 19	X			X			X			X			X			X			X			X
GRO by GC-FID (S)	All	NDPs: 0 Tests: 19			X		X				X		X			X			X				X	
Metals in solid samples by OES	All	NDPs: 0 Tests: 19	X			X			X			X			X			X			X			X
PAH by GCMS	All	NDPs: 0 Tests: 19	X			X			X			X			X			X			X			X
pH	All	NDPs: 0 Tests: 19	X			X			X			X			X			X			X			X
Phenols by HPLC (S)	All	NDPs: 0 Tests: 19	X			X			X			X			X			X			X			X
Sample description	All	NDPs: 0 Tests: 19	X			X			X			X			X			X			X			X
Total Organic Carbon	All	NDPs: 0 Tests: 19	X			X			X			X			X			X			X			X

16632940	CBPU4_5-65		0.00 - 0.00	60g VOC (ALE215)	S									X						
				250g Amber Jar (ALE210)	S		X				X	X	X		X	X	X	X	X	X
16632933	CBPU4_5-64		0.00 - 0.00	60g VOC (ALE215)	S									X						
				400g Tub (ALE214)	S				X											
				250g Amber Jar (ALE210)	S	X	X	X			X	X	X		X	X	X	X	X	X
16632926	CBPU4_5-63		0.00 - 0.00	60g VOC (ALE215)	S									X						
				250g Amber Jar (ALE210)	S		X				X	X	X		X	X	X	X	X	X
16632918	CBPU4_5-62		0.00 - 0.00	60g VOC (ALE215)	S									X						
				400g Tub (ALE214)	S				X	X										
				250g Amber Jar (ALE210)	S	X	X	X			X	X	X		X	X	X	X	X	X
16632910	CBPU4_5-61		0.00 - 0.00	60g VOC (ALE215)	S									X						
				250g Amber Jar (ALE210)	S		X				X	X	X		X	X	X	X	X	X
16632903	CBPU4_5-60		0.00 - 0.00	60g VOC (ALE215)	S									X						
				400g Tub (ALE214)	S				X											
				250g Amber Jar (ALE210)	S	X	X	X			X	X	X		X	X	X	X	X	X
16632897	CBPU4_5-59		0.00 - 0.00	60g VOC (ALE215)	S									X						
				250g Amber Jar (ALE210)	S		X				X	X	X		X	X	X	X	X	X
16633018	CBPU4_5-58		0.00 - 0.00	60g VOC (ALE215)	S									X						
				400g Tub (ALE214)	S				X											
				250g Amber Jar (ALE210)	S	X	X	X			X	X	X		X	X	X	X	X	X
16633011	CBPU4_5-57		0.00 - 0.00	60g VOC (ALE215)	S									X						

Validated

CERTIFICATE OF ANALYSIS

SDG:	171125-14	**Client Reference:**		**Report Number:**	439663
Location:	Llanwern	**Order Number:**	LLA372	**Superseded Report:**	437932

Results Legend

X **Test**

N **No Determination Possible**

Sample Types -
S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

Lab Sample No(s)			16632886		16632969			16632975			16632982		16632988			16632996			16633005		16633011
Customer Sample Reference			CBPU4_5-33		CBPU4_5-51			CBPU4_5-52			CBPU4_5-53		CBPU4_5-54			CBPU4_5-55			CBPU4_5-56		CBPU4_5-57
AGS Reference																					
Depth (m)			0.00 - 0.00		0.00 - 0.00			0.00 - 0.00			0.00 - 0.00		0.00 - 0.00			0.00 - 0.00			0.00 - 0.00		0.00 - 0.00
Container			250g Amber Jar (ALE210)	400g Tub (ALE214)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	400g Tub (ALE214)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	400g Tub (ALE214)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	400g Tub (ALE214)	60g VOC (ALE215)	250g Amber Jar (ALE210)
Sample Type			S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
Total Sulphate	All	NDPs: 0 Tests: 10	X					X					X					X			
Total Sulphur	All	NDPs: 0 Tests: 10	X					X					X					X			
TPH CWG GC (S)	All	NDPs: 0 Tests: 19	X			X		X			X		X			X		X			X
VOC MS (S)	All	NDPs: 0 Tests: 19			X		X			X		X			X		X			X	

16632940	CBPU4_5-65		0.00 - 0.00	60g VOC (ALE215)	S					
				250g Amber Jar (ALE210)	S			X		
16632933	CBPU4_5-64		0.00 - 0.00	60g VOC (ALE215)	S				X	
				400g Tub (ALE214)	S					
				250g Amber Jar (ALE210)	S		X	X		
16632926	CBPU4_5-63		0.00 - 0.00	60g VOC (ALE215)	S				X	
				250g Amber Jar (ALE210)	S			X		
16632918	CBPU4_5-62		0.00 - 0.00	60g VOC (ALE215)	S				X	
				400g Tub (ALE214)	S					
				250g Amber Jar (ALE210)	S		X	X		
16632910	CBPU4_5-61		0.00 - 0.00	60g VOC (ALE215)	S				X	
				250g Amber Jar (ALE210)	S			X		
16632903	CBPU4_5-60		0.00 - 0.00	60g VOC (ALE215)	S				X	
				400g Tub (ALE214)	S					
				250g Amber Jar (ALE210)	S		X	X		
16632897	CBPU4_5-59		0.00 - 0.00	60g VOC (ALE215)	S				X	
				250g Amber Jar (ALE210)	S			X		
16633018	CBPU4_5-58		0.00 - 0.00	60g VOC (ALE215)	S				X	
				400g Tub (ALE214)	S					
				250g Amber Jar (ALE210)	S		X	X		
16633011	CBPU4_5-57		0.00 - 0.00	60g VOC (ALE215)	S				X	

Validated

CERTIFICATE OF ANALYSIS

SDG: 171125-14
Location: Llanwern
Client Reference:
Order Number: LLA372
Report Number: 439663
Superseded Report: 437932

Results Legend

- X — Test
- N — No Determination Possible

Sample Types -

- S - Soil/Solid
- UNS - Unspecified Solid
- GW - Ground Water
- SW - Surface Water
- LE - Land Leachate
- PL - Prepared Leachate
- PR - Process Water
- SA - Saline Water
- TE - Trade Effluent
- TS - Treated Sewage
- US - Untreated Sewage
- RE - Recreational Water
- DW - Drinking Water Non-regulatory
- UNL - Unspecified Liquid
- SL - Sludge
- G - Gas
- OTH - Other

Lab Sample No(s)			16632948			16632955		16632962		
Customer Sample Reference			CBPU4_5-66			CBPU4_5-67		CBPU4_5-68		
AGS Reference										
Depth (m)			0.00 - 0.00			0.00 - 0.00		0.00 - 0.00		
Container			250g Amber Jar (ALE210)	400g Tub (ALE214)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	400g Tub (ALE214)	60g VOC (ALE215)
Sample Type			S	S	S	S	S	S	S	S
Alkali Metals by iCap-OES (Soil)	All	NDPs: 0 Tests: 10	X					X		
Ammonium Soil by Titration	All	NDPs: 0 Tests: 19	X			X		X		
Anions by Kone (soil)	All	NDPs: 0 Tests: 10	X					X		
Asbestos ID*	All	NDPs: 0 Tests: 10		X					X	
Asbestos Quantification - Full	All	NDPs: 0 Tests: 3		X						
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 19	X			X		X		
EPH CWG (Aliphatic) GC (S)	All	NDPs: 0 Tests: 19	X			X		X		
EPH CWG (Aromatic) GC (S)	All	NDPs: 0 Tests: 19	X			X		X		
GRO by GC-FID (S)	All	NDPs: 0 Tests: 19			X		X			X
Metals in solid samples by OES	All	NDPs: 0 Tests: 19	X			X		X		
PAH by GCMS	All	NDPs: 0 Tests: 19	X			X		X		
pH	All	NDPs: 0 Tests: 19	X			X		X		
Phenols by HPLC (S)	All	NDPs: 0 Tests: 19	X			X		X		
Sample description	All	NDPs: 0 Tests: 19	X			X		X		
Total Organic Carbon	All	NDPs: 0 Tests: 19	X			X		X		

15:37:22 10/01/2018

Validated

CERTIFICATE OF ANALYSIS

SDG:	171125-14	**Client Reference:**		**Report Number:**	439663
Location:	Llanwern	**Order Number:**	LLA372	**Superseded Report:**	437932

Results Legend

X **Test**

N **No Determination Possible**

Sample Types -
S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

Lab Sample No(s)			16632948			16632955			16632962		
Customer Sample Reference			CBPU4_5-66			CBPU4_5-67			CBPU4_5-68		
AGS Reference											
Depth (m)			0.00 - 0.00			0.00 - 0.00			0.00 - 0.00		
Container			250g Amber Jar (ALE210)	400g Tub (ALE214)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	400g Tub (ALE214)	60g VOC (ALE215)	
Sample Type			S	S	S	S	S	S	S	S	
Total Sulphate	All	NDPs: 0 Tests: 10	X					X			
Total Sulphur	All	NDPs: 0 Tests: 10	X					X			
TPH CWG GC (S)	All	NDPs: 0 Tests: 19	X			X		X			
VOC MS (S)	All	NDPs: 0 Tests: 19			X		X			X	

CERTIFICATE OF ANALYSIS

SDG:	171125-14	**Client Reference:**		**Report Number:**	439663
Location:	Llanwern	**Order Number:**	LLA372	**Superseded Report:**	437932

Sample Descriptions

Grain Sizes

very fine	<0.063mm	fine	0.063mm - 0.1mm	medium	0.1mm - 2mm	coarse	2mm - 10mm	very coarse	>10mm

Lab Sample No(s)	Customer Sample Ref.	Depth (m)	Colour	Description	Inclusions	Inclusions 2
16632886	CBPU4_5-33	0.00 - 0.00	Dark Brown	Loamy Sand	Stones	Crushed Brick
16632969	CBPU4_5-51	0.00 - 0.00	Dark Brown	Loamy Sand	Stones	Vegetation
16632975	CBPU4_5-52	0.00 - 0.00	Dark Brown	Loamy Sand	Stones	None
16632982	CBPU4_5-53	0.00 - 0.00	Dark Brown	Loamy Sand	Stones	Vegetation
16632988	CBPU4_5-54	0.00 - 0.00	Dark Brown	Loamy Sand	Vegetation	Stones
16632996	CBPU4_5-55	0.00 - 0.00	Dark Brown	Loamy Sand	Stones	Vegetation
16633005	CBPU4_5-56	0.00 - 0.00	Dark Brown	Loamy Sand	Stones	Vegetation
16633011	CBPU4_5-57	0.00 - 0.00	Dark Brown	Sandy Loam	Stones	Vegetation
16633018	CBPU4_5-58	0.00 - 0.00	Dark Brown	Loamy Sand	Brick	Vegetation
16632897	CBPU4_5-59	0.00 - 0.00	Dark Brown	Loamy Sand	Stones	None
16632903	CBPU4_5-60	0.00 - 0.00	Black	Loamy Sand	Stones	Vegetation
16632910	CBPU4_5-61	0.00 - 0.00	Dark Brown	Loamy Sand	Stones	Vegetation
16632918	CBPU4_5-62	0.00 - 0.00	Dark Brown	Loamy Sand	Stones	Vegetation
16632926	CBPU4_5-63	0.00 - 0.00	Black	Loamy Sand	Stones	Vegetation
16632933	CBPU4_5-64	0.00 - 0.00	Dark Brown	Loamy Sand	Stones	None
16632940	CBPU4_5-65	0.00 - 0.00	Dark Brown	Loamy Sand	Stones	None
16632948	CBPU4_5-66	0.00 - 0.00	Dark Brown	Loamy Sand	Stones	Crushed Brick
16632955	CBPU4_5-67	0.00 - 0.00	Dark Brown	Loamy Sand	Stones	Crushed Brick
16632962	CBPU4_5-68	0.00 - 0.00	Dark Brown	Loamy Sand	Stones	Vegetation

These descriptions are only intended to act as a cross check if sample identities are questioned, and to provide a log of sample matrices with respect to MCERTS validation. They are not intended as full geological descriptions.

We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally ocurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample.

Other coarse granular materials such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

CERTIFICATE OF ANALYSIS

SDG:	171125-14	**Client Reference:**		**Report Number:**	439663
Location:	Llanwern	**Order Number:**	LLA372	**Superseded Report:**	437932

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	CBPU4_5-33	CBPU4_5-51	CBPU4_5-52	CBPU4_5-53	CBPU4_5-54	CBPU4_5-55
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	24/11/2017	24/11/2017	24/11/2017	24/11/2017	24/11/2017	24/11/2017
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	25/11/2017	25/11/2017	25/11/2017	25/11/2017	25/11/2017	25/11/2017
			SDG Ref	171125-14	171125-14	171125-14	171125-14	171125-14	171125-14
			Lab Sample No.(s)	16632886	16632969	16632975	16632982	16632988	16632996
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		9.6	12	8.5	9.1	10	12
Actinolite*	-	SUB (ASB)		Not Detected #		Not Detected #		Not Detected #	
Amosite*	-	SUB (ASB)		Not Detected #		Not Detected #		Not Detected #	
Anthophyllite*	-	SUB (ASB)		Not Detected #		Not Detected #		Not Detected #	
Chrysotile*	-	SUB (ASB)		Not Detected #		Detected #		Not Detected #	
Crocidolite*	-	SUB (ASB)		Not Detected #		Not Detected #		Not Detected #	
Non-Asbestos Fibres*	-	SUB (ASB)		Not Detected #		Not Detected #		Not Detected #	
Tremolite*	-	SUB (ASB)		Not Detected #		Not Detected #		Not Detected #	
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	<12 M	<12 M	<12 M	<12 M	<12 M
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M
Sulphur, Total	<0.02 %	TM132		0.408		0.2		0.372	
Sulphate, Total potential	<0.06 %	TM132		1.22		0.6		1.12	
Soil Organic Matter (SOM)	<0.35 %	TM132		3.97 #	4.95 #	3.45 #	4.9 #	5.36 #	7.12 #
pH	1 pH Units	TM133		10.1 M	11.1 M	11.7 M	11 M	10.2 M	10.9 M
Cyanide, Total	<1 mg/kg	TM153		<1 M	<1 M	4.11 M	2.72 M	1.52 M	<1 M
Arsenic	<0.6 mg/kg	TM181		5.05 M	4.08 M	6.76 M	3.25 M	6.12 M	5.02 M
Cadmium	<0.02 mg/kg	TM181		2.4 M	<0.02 M	2.5 M	0.108 M	1.52 M	0.491 M
Chromium	<0.9 mg/kg	TM181		94.2 M	175 M	617 M	142 M	77 M	106 M
Copper	<1.4 mg/kg	TM181		26.8 M	25 M	138 M	24.2 M	31.3 M	28 M
Iron	<1000 mg/kg	TM181		120000 #	84200 #	151000 #	94700 #	94000 #	61100 #
Lead	<0.7 mg/kg	TM181		81.1 M	67.2 M	579 M	87.3 M	77 M	80.4 M
Manganese	<0.13 mg/kg	TM181		13300 M	17700 M	21900 M	15400 M	10500 M	9740 M
Mercury	<0.14 mg/kg	TM181		0.462 M	<0.14 M	4.7 M	0.163 M	0.669 M	0.408 M
Nickel	<0.2 mg/kg	TM181		16.5 M	12.1 M	41 M	7.67 M	15.8 M	10.8 M
Selenium	<1 mg/kg	TM181		4.27 #	8.5 #	15.3 #	7.46 #	3.25 #	5.49 #
Vanadium	<0.2 mg/kg	TM181		191 #	242 #	394 #	252 #	163 #	184 #
Zinc	<1.9 mg/kg	TM181		315 M	213 M	761 M	608 M	345 M	403 M
Sulphate, acid soluble (total)	<0.02 %	TM221		0.433		0.452		0.322	
Calcium	<21 mg/kg	TM224		174000		179000		188000	
Magnesium	<8 mg/kg	TM224		24600		26500		16200	

Validated

CERTIFICATE OF ANALYSIS

SDG:	171125-14	**Client Reference:**		**Report Number:**	439663
Location:	Llanwern	**Order Number:**	LLA372	**Superseded Report:**	437932

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	CBPU4_5-33	CBPU4_5-51	CBPU4_5-52	CBPU4_5-53	CBPU4_5-54	CBPU4_5-55
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	24/11/2017	24/11/2017	24/11/2017	24/11/2017	24/11/2017	24/11/2017
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	25/11/2017	25/11/2017	25/11/2017	25/11/2017	25/11/2017	25/11/2017
			SDG Ref	171125-14	171125-14	171125-14	171125-14	171125-14	171125-14
			Lab Sample No.(s)	16632886	16632969	16632975	16632982	16632988	16632996
			AGS Reference						
Soluble Sulphate 2:1 extract as SO4 BRE	<0.004 g/l	TM243		0.311 M		0.0809 M		0.24 M	
Asbestos Quantification - Gravimetric - %	<0.001 %	TM304				0.0049 #			
Asbestos Quantification - PCOM Evaluation - %	<0.001 %	TM304				<0.001 #			
Additional Asbestos Components (Using TM048)	-	TM304				None #			
Analysts Comments	-	TM304				N/A			
Asbestos Quantification - Total - %	<0.001 %	TM304				0.0049 #			

Validated

CERTIFICATE OF ANALYSIS

SDG:	171125-14	**Client Reference:**		**Report Number:**	439663
Location:	Llanwern	**Order Number:**	LLA372	**Superseded Report:**	437932

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	CBPU4_5-56	CBPU4_5-57	CBPU4_5-58	CBPU4_5-59	CBPU4_5-60	CBPU4_5-61
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	24/11/2017	24/11/2017	24/11/2017	24/11/2017	24/11/2017	24/11/2017
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	25/11/2017	25/11/2017	25/11/2017	25/11/2017	25/11/2017	25/11/2017
			SDG Ref	171125-14	171125-14	171125-14	171125-14	171125-14	171125-14
			Lab Sample No.(s)	16633005	16633011	16633018	16632897	16632903	16632910
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		11	14	8.4	9	8.8	11
Actinolite*	-	SUB (ASB)		Not Detected #		Not Detected #		Not Detected #	
Amosite*	-	SUB (ASB)		Not Detected #		Not Detected #		Not Detected #	
Anthophyllite*	-	SUB (ASB)		Not Detected #		Not Detected #		Not Detected #	
Chrysotile*	-	SUB (ASB)		Not Detected #		Not Detected #		Not Detected #	
Crocidolite*	-	SUB (ASB)		Not Detected #		Not Detected #		Not Detected #	
Non-Asbestos Fibres*	-	SUB (ASB)		Not Detected #		Not Detected #		Not Detected #	
Tremolite*	-	SUB (ASB)		Not Detected #		Not Detected #		Not Detected #	
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	<12 M	<12 M	<12 M	<12 M	22.1 M
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M
Sulphur, Total	<0.02 %	TM132		0.431		0.246		0.436	
Sulphate, Total potential	<0.06 %	TM132		1.29		0.738		1.31	
Soil Organic Matter (SOM)	<0.35 %	TM132		10.1 #	3.12 #	2.02 #	5.97 #	6.88 #	6.07 #
pH	1 pH Units	TM133		9.92 M	10.2 M	10.4 M	10.4 M	10.4 M	10.5 M
Cyanide, Total	<1 mg/kg	TM153		3.07 M	<1 M	<1 M	2.48 M	1.78 M	1.76 M
Arsenic	<0.6 mg/kg	TM181		5.7 M	3.94 M	2.94 M	2.77 M	3.95 M	7.8 M
Cadmium	<0.02 mg/kg	TM181		1.96 M	<0.02 M	1.33 M	<0.02 M	0.645 M	0.701 M
Chromium	<0.9 mg/kg	TM181		112 M	184 M	186 M	183 M	72.8 M	151 M
Copper	<1.4 mg/kg	TM181		32.8 M	16.6 M	10.1 M	19.1 M	23.6 M	42.3 M
Iron	<1000 mg/kg	TM181		102000 #	78100 #	75800 #	88400 #	71000 #	96500 #
Lead	<0.7 mg/kg	TM181		128 M	34.5 M	52.7 M	58.8 M	79.7 M	181 M
Manganese	<0.13 mg/kg	TM181		9540 M	21600 M	15100 M	12200 M	11900 M	12800 M
Mercury	<0.14 mg/kg	TM181		0.767 M	<0.14 M	<0.14 M	<0.14 M	0.419 M	0.444 M
Nickel	<0.2 mg/kg	TM181		14.2 M	8.41 M	7.04 M	8.68 M	11 M	12.9 M
Selenium	<1 mg/kg	TM181		3.5 #	9.04 #	4.29 #	7.7 #	6.97 #	6.63 #
Vanadium	<0.2 mg/kg	TM181		243 #	267 #	249 #	440 #	134 #	188 #
Zinc	<1.9 mg/kg	TM181		804 M	160 M	406 M	482 M	381 M	860 M
Sulphate, acid soluble (total)	<0.02 %	TM221		0.431		0.356		0.613	
Calcium	<21 mg/kg	TM224		175000		204000		161000	
Magnesium	<8 mg/kg	TM224		13900		15700		20900	

Validated

CERTIFICATE OF ANALYSIS

SDG:	171125-14	**Client Reference:**		**Report Number:**	439663
Location:	Llanwern	**Order Number:**	LLA372	**Superseded Report:**	437932

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	CBPU4_5-56	CBPU4_5-57	CBPU4_5-58	CBPU4_5-59	CBPU4_5-60	CBPU4_5-61
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	24/11/2017	24/11/2017	24/11/2017	24/11/2017	24/11/2017	24/11/2017
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	25/11/2017	25/11/2017	25/11/2017	25/11/2017	25/11/2017	25/11/2017
			SDG Ref	171125-14	171125-14	171125-14	171125-14	171125-14	171125-14
			Lab Sample No.(s)	16633005	16633011	16633018	16632897	16632903	16632910
			AGS Reference						
Soluble Sulphate 2:1 extract as SO4 BRE	<0.004 g/l	TM243		0.175 M		0.16 M		0.269 M	

Validated

CERTIFICATE OF ANALYSIS

SDG:	171125-14	**Client Reference:**		**Report Number:**	439663
Location:	Llanwern	**Order Number:**	LLA372	**Superseded Report:**	437932

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	CBPU4_5-62	CBPU4_5-63	CBPU4_5-64	CBPU4_5-65	CBPU4_5-66	CBPU4_5-67
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	24/11/2017	24/11/2017	24/11/2017	24/11/2017	24/11/2017	24/11/2017
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	25/11/2017	25/11/2017	25/11/2017	25/11/2017	25/11/2017	25/11/2017
			SDG Ref	171125-14	171125-14	171125-14	171125-14	171125-14	171125-14
			Lab Sample No.(s)	16632918	16632926	16632933	16632940	16632948	16632955
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		9.8	5.2	8.9	8.7	10	7.6
Actinolite*	-	SUB (ASB)		Not Detected #		Not Detected #		Not Detected #	
Amosite*	-	SUB (ASB)		Not Detected #		Not Detected #		Not Detected #	
Anthophyllite*	-	SUB (ASB)		Not Detected #		Not Detected #		Not Detected #	
Chrysotile*	-	SUB (ASB)		Detected #		Not Detected #		Detected #	
Crocidolite*	-	SUB (ASB)		Not Detected #		Not Detected #		Not Detected #	
Non-Asbestos Fibres*	-	SUB (ASB)		Not Detected #		Not Detected #		Not Detected #	
Tremolite*	-	SUB (ASB)		Not Detected #		Not Detected #		Not Detected #	
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	<12 M	<12 M	<12 M	<12 M	<12 M
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M
Sulphur, Total	<0.02 %	TM132		0.333		0.358		0.505	
Sulphate, Total potential	<0.06 %	TM132		0.999		1.07		1.52	
Soil Organic Matter (SOM)	<0.35 %	TM132		9.52 #	6.88 #	4.09 #	3.78 #	5 #	2.88 #
pH	1 pH Units	TM133		9.61 M	10 M	11 M	10.6 M	10.7 M	10.6 M
Cyanide, Total	<1 mg/kg	TM153		1.28 M	3.09 M	<1 M	<1 M	<1 M	<1 M
Arsenic	<0.6 mg/kg	TM181		7.09 M	3.88 M	3.68 M	4.89 M	2.36 M	5.18 M
Cadmium	<0.02 mg/kg	TM181		1.57 M	0.644 M	0.151 M	0.029 M	0.408 M	<0.02 M
Chromium	<0.9 mg/kg	TM181		97.5 M	79.6 M	83.7 M	94.7 M	65.8 M	187 M
Copper	<1.4 mg/kg	TM181		118 M	27.6 M	42.4 M	18.8 M	13.6 M	24.6 M
Iron	<1000 mg/kg	TM181		80600 #	76500 #	83500 #	54400 #	54500 #	78600 #
Lead	<0.7 mg/kg	TM181		120 M	103 M	62 M	48.3 M	35.2 M	79.8 M
Manganese	<0.13 mg/kg	TM181		9910 M	10100 M	13300 M	8360 M	11200 M	15200 M
Mercury	<0.14 mg/kg	TM181		0.866 M	0.514 M	0.672 M	0.476 M	0.321 M	<0.14 M
Nickel	<0.2 mg/kg	TM181		11.7 M	10.8 M	11 M	10.7 M	5.8 M	21.1 M
Selenium	<1 mg/kg	TM181		3 #	6.03 #	7.41 #	4.35 #	6.46 #	6.94 #
Vanadium	<0.2 mg/kg	TM181		122 #	129 #	229 #	139 #	128 #	443 #
Zinc	<1.9 mg/kg	TM181		693 M	1010 M	280 M	203 M	254 M	218 M
Sulphate, acid soluble (total)	<0.02 %	TM221		0.314		0.602		0.651	
Calcium	<21 mg/kg	TM224		185000		162000		169000	
Magnesium	<8 mg/kg	TM224		19700		28500		22600	

Validated

CERTIFICATE OF ANALYSIS

SDG:	171125-14	**Client Reference:**		**Report Number:**	439663
Location:	Llanwern	**Order Number:**	LLA372	**Superseded Report:**	437932

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	CBPU4_5-62	CBPU4_5-63	CBPU4_5-64	CBPU4_5-65	CBPU4_5-66	CBPU4_5-67
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	24/11/2017	24/11/2017	24/11/2017	24/11/2017	24/11/2017	24/11/2017
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	25/11/2017	25/11/2017	25/11/2017	25/11/2017	25/11/2017	25/11/2017
			SDG Ref	171125-14	171125-14	171125-14	171125-14	171125-14	171125-14
			Lab Sample No.(s)	16632918	16632926	16632933	16632940	16632948	16632955
			AGS Reference						
Soluble Sulphate 2:1 extract as SO4 BRE	<0.004 g/l	TM243		0.118 M		0.193 M		0.387 M	
Asbestos Quantification - Gravimetric - %	<0.001 %	TM304		<0.001 #				<0.001 #	
Asbestos Quantification - PCOM Evaluation - %	<0.001 %	TM304		<0.001 #				<0.001 #	
Additional Asbestos Components (Using TM048)	-	TM304		None #				None #	
Analysts Comments	-	TM304		N/C				N/C	
Asbestos Quantification - Total - %	<0.001 %	TM304		<0.001 #				<0.001 #	

CERTIFICATE OF ANALYSIS

SDG:	171125-14	**Client Reference:**		**Report Number:**	439663
Location:	Llanwern	**Order Number:**	LLA372	**Superseded Report:**	437932

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Customer Sample Ref.	CBPU4_5-68
Depth (m)	0.00 - 0.00
Sample Type	Soil/Solid (S)
Date Sampled	24/11/2017
Sample Time	00:00
Date Received	25/11/2017
SDG Ref	171125-14
Lab Sample No.(s)	16632962
AGS Reference	

Component	LOD/Units	Method	
Moisture Content Ratio (% of as received sample)	%	PM024	9.2
Actinolite*	-	SUB (ASB)	Not Detected #
Amosite*	-	SUB (ASB)	Not Detected #
Anthophyllite*	-	SUB (ASB)	Not Detected #
Chrysotile*	-	SUB (ASB)	Not Detected #
Crocidolite*	-	SUB (ASB)	Not Detected #
Non-Asbestos Fibres*	-	SUB (ASB)	Not Detected #
Tremolite*	-	SUB (ASB)	Not Detected #
Exchangeable Ammonia as N	<12 mg/kg	TM024	<12 M
Phenol	<0.01 mg/kg	TM062 (S)	<0.01 M
Cresols	<0.01 mg/kg	TM062 (S)	<0.01 M
Xylenols	<0.015 mg/kg	TM062 (S)	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)	<0.035 M
Sulphur, Total	<0.02 %	TM132	0.614
Sulphate, Total potential	<0.06 %	TM132	1.84
Soil Organic Matter (SOM)	<0.35 %	TM132	2.47 #
pH	1 pH Units	TM133	9.6 M
Cyanide, Total	<1 mg/kg	TM153	<1 M
Arsenic	<0.6 mg/kg	TM181	3.82 M
Cadmium	<0.02 mg/kg	TM181	0.668 M
Chromium	<0.9 mg/kg	TM181	190 M
Copper	<1.4 mg/kg	TM181	8.16 M
Iron	<1000 mg/kg	TM181	61000 #
Lead	<0.7 mg/kg	TM181	39.5 M
Manganese	<0.13 mg/kg	TM181	15000 M
Mercury	<0.14 mg/kg	TM181	<0.14 M
Nickel	<0.2 mg/kg	TM181	6.52 M
Selenium	<1 mg/kg	TM181	3.88 #
Vanadium	<0.2 mg/kg	TM181	254 #
Zinc	<1.9 mg/kg	TM181	165 M
Sulphate, acid soluble (total)	<0.02 %	TM221	0.325
Calcium	<21 mg/kg	TM224	212000
Magnesium	<8 mg/kg	TM224	25700

Validated

CERTIFICATE OF ANALYSIS

SDG:	171125-14	**Client Reference:**		**Report Number:**	439663
Location:	Llanwern	**Order Number:**	LLA372	**Superseded Report:**	437932

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Customer Sample Ref.	CBPU4_5-68
Depth (m)	0.00 - 0.00
Sample Type	Soil/Solid (S)
Date Sampled	24/11/2017
Sample Time	00:00
Date Received	25/11/2017
SDG Ref	171125-14
Lab Sample No.(s)	16632962
AGS Reference	

Component	LOD/Units	Method	
Soluble Sulphate 2:1 extract as SO4 BRE	<0.004 g/l	TM243	0.101 M

Validated

CERTIFICATE OF ANALYSIS

SDG:	171125-14	**Client Reference:**		**Report Number:**	439663
Location:	Llanwern	**Order Number:**	LLA372	**Superseded Report:**	437932

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	CBPU4_5-33	CBPU4_5-51	CBPU4_5-52	CBPU4_5-53	CBPU4_5-54	CBPU4_5-55
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	24/11/2017	24/11/2017	24/11/2017	24/11/2017	24/11/2017	24/11/2017
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	25/11/2017	25/11/2017	25/11/2017	25/11/2017	25/11/2017	25/11/2017
			SDG Ref	171125-14	171125-14	171125-14	171125-14	171125-14	171125-14
			Lab Sample No.(s)	16632886	16632969	16632975	16632982	16632988	16632996
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		89.7	101	100	97.9	101	104
Acenaphthene-d10 % recovery**	%	TM218		90.3	103	98.4	99.5	101	106
Phenanthrene-d10 % recovery**	%	TM218		86.4	98.4	96	95.3	99.1	100
Chrysene-d12 % recovery**	%	TM218		93.4	111	102	103	100	110
Perylene-d12 % recovery**	%	TM218		95.6	117	108	107	106	113
Naphthalene	<0.009 mg/kg	TM218		0.313 M	0.114 M	0.286 M	0.11 M	0.0907 M	0.125 M
Acenaphthylene	<0.012 mg/kg	TM218		0.037 M	0.0559 M	0.0705 M	0.0407 M	0.0299 M	0.0295 M
Acenaphthene	<0.008 mg/kg	TM218		0.0469 M	0.0671 M	0.0849 M	0.128 M	<0.008 M	0.0656 M
Fluorene	<0.01 mg/kg	TM218		0.0331 M	0.069 M	0.0829 M	0.103 M	0.0336 M	0.0427 M
Phenanthrene	<0.015 mg/kg	TM218		2.48 M	0.936 M	1.02 M	0.539 M	0.469 M	0.519 M
Anthracene	<0.016 mg/kg	TM218		0.49 M	0.228 M	0.251 M	0.119 M	0.0974 M	0.111 M
Fluoranthene	<0.017 mg/kg	TM218		2.86 M	2 M	1.96 M	1.22 M	0.962 M	0.975 M
Pyrene	<0.015 mg/kg	TM218		2.92 M	1.73 M	2.16 M	1.52 M	1.06 M	1.03 M
Benz(a)anthracene	<0.014 mg/kg	TM218		1.85 M	1.26 M	1.09 M	1.16 M	0.75 M	0.797 M
Chrysene	<0.01 mg/kg	TM218		1.8 M	1.42 M	1.2 M	1.43 M	0.743 M	1.41 M
Benzo(b)fluoranthene	<0.015 mg/kg	TM218		2.38 M	1.89 M	2.18 M	1.84 M	1.46 M	1.5 M
Benzo(k)fluoranthene	<0.014 mg/kg	TM218		0.957 M	0.646 M	0.719 M	0.678 M	0.485 M	0.583 M
Benzo(a)pyrene	<0.015 mg/kg	TM218		1.72 M	1.31 M	1.24 M	1.22 M	0.85 M	0.948 M
Indeno(1,2,3-cd)pyrene	<0.018 mg/kg	TM218		1.04 M	0.876 M	0.887 M	0.894 M	0.679 M	0.696 M
Dibenzo(a,h)anthracene	<0.023 mg/kg	TM218		0.321 M	0.249 M	0.269 M	0.271 M	0.204 M	0.212 M
Benzo(g,h,i)perylene	<0.024 mg/kg	TM218		1.26 M	1.12 M	1.06 M	1.09 M	0.882 M	0.902 M
PAH, Total Detected USEPA 16	<0.118 mg/kg	TM218		20.5	14	14.6	12.4	8.79	9.95

CERTIFICATE OF ANALYSIS

SDG:	171125-14	**Client Reference:**		**Report Number:**	439663
Location:	Llanwern	**Order Number:**	LLA372	**Superseded Report:**	437932

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	CBPU4_5-56	CBPU4_5-57	CBPU4_5-58	CBPU4_5-59	CBPU4_5-60	CBPU4_5-61
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	24/11/2017	24/11/2017	24/11/2017	24/11/2017	24/11/2017	24/11/2017
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	25/11/2017	25/11/2017	25/11/2017	25/11/2017	25/11/2017	25/11/2017
			SDG Ref	171125-14	171125-14	171125-14	171125-14	171125-14	171125-14
			Lab Sample No.(s)	16633005	16633011	16633018	16632897	16632903	16632910
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		98.6	100	91.6	103	88.7	96.3
Acenaphthene-d10 % recovery**	%	TM218		100	99.9	94.4	102	90.5	94.9
Phenanthrene-d10 % recovery**	%	TM218		95.9	95.5	90.1	101	86	92.7
Chrysene-d12 % recovery**	%	TM218		101	104	98	103	93.8	96.3
Perylene-d12 % recovery**	%	TM218		101	106	100	109	96.4	104
Naphthalene	<0.009 mg/kg	TM218		0.0982 M	0.0633 M	0.113 M	0.0642 M	0.0507 M	0.167 M
Acenaphthylene	<0.012 mg/kg	TM218		0.0164 M	<0.012 M	0.0262 M	0.0276 M	0.0231 M	0.0454 M
Acenaphthene	<0.008 mg/kg	TM218		0.0589 M	0.0266 M	0.0496 M	0.402 M	0.115 M	0.092 M
Fluorene	<0.01 mg/kg	TM218		0.0338 M	<0.01 M	0.0288 M	0.222 M	0.0822 M	0.0704 M
Phenanthrene	<0.015 mg/kg	TM218		0.359 M	0.337 M	0.47 M	0.505 M	0.425 M	0.691 M
Anthracene	<0.016 mg/kg	TM218		0.072 M	0.053 M	0.109 M	0.115 M	0.0943 M	0.162 M
Fluoranthene	<0.017 mg/kg	TM218		0.582 M	0.642 M	0.986 M	1.31 M	1.18 M	1.66 M
Pyrene	<0.015 mg/kg	TM218		0.624 M	0.663 M	1.11 M	1.41 M	1.37 M	1.64 M
Benz(a)anthracene	<0.014 mg/kg	TM218		0.495 M	0.452 M	0.956 M	1.21 M	1.09 M	1.78 M
Chrysene	<0.01 mg/kg	TM218		0.559 M	0.588 M	1.26 M	1.18 M	1.16 M	1.67 M
Benzo(b)fluoranthene	<0.015 mg/kg	TM218		0.904 M	0.675 M	1.29 M	2.13 M	1.92 M	2.63 M
Benzo(k)fluoranthene	<0.014 mg/kg	TM218		0.314 M	0.268 M	0.604 M	0.772 M	0.668 M	0.893 M
Benzo(a)pyrene	<0.015 mg/kg	TM218		0.501 M	0.463 M	1.1 M	1.38 M	1.28 M	2.05 M
Indeno(1,2,3-cd)pyrene	<0.018 mg/kg	TM218		0.362 M	0.317 M	0.762 M	0.933 M	0.941 M	1.4 M
Dibenzo(a,h)anthracene	<0.023 mg/kg	TM218		0.127 M	0.0912 M	0.254 M	0.324 M	0.284 M	0.419 M
Benzo(g,h,i)perylene	<0.024 mg/kg	TM218		0.471 M	0.462 M	1.05 M	1.15 M	1.25 M	1.66 M
PAH, Total Detected USEPA 16	<0.118 mg/kg	TM218		5.58	5.1	10.2	13.1	11.9	17

Validated

CERTIFICATE OF ANALYSIS

SDG:	171125-14	**Client Reference:**		**Report Number:**	439663
Location:	Llanwern	**Order Number:**	LLA372	**Superseded Report:**	437932

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	CBPU4_5-62	CBPU4_5-63	CBPU4_5-64	CBPU4_5-65	CBPU4_5-66	CBPU4_5-67
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	24/11/2017	24/11/2017	24/11/2017	24/11/2017	24/11/2017	24/11/2017
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	25/11/2017	25/11/2017	25/11/2017	25/11/2017	25/11/2017	25/11/2017
			SDG Ref	171125-14	171125-14	171125-14	171125-14	171125-14	171125-14
			Lab Sample No.(s)	16632918	16632926	16632933	16632940	16632948	16632955
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		84.4	89.8	98	93.8	98.2	100
Acenaphthene-d10 % recovery**	%	TM218		86.9	91	99.6	92.4	97.4	104
Phenanthrene-d10 % recovery**	%	TM218		82.9	86.6	95.3	90.2	95.2	98.9
Chrysene-d12 % recovery**	%	TM218		89.2	93.1	102	94.3	99.2	110
Perylene-d12 % recovery**	%	TM218		90.8	96.5	103	102	107	114
Naphthalene	<0.009 mg/kg	TM218		0.121 M	0.1 M	0.0936 M	0.121 M	0.134 M	0.122 M
Acenaphthylene	<0.012 mg/kg	TM218		0.0253 M	0.0327 M	0.0134 M	0.0271 M	0.0363 M	0.0303 M
Acenaphthene	<0.008 mg/kg	TM218		0.0542 M	0.0645 M	0.0674 M	0.0697 M	0.0538 M	0.0835 M
Fluorene	<0.01 mg/kg	TM218		0.0662 M	0.0313 M	0.0363 M	0.0301 M	0.0375 M	0.0336 M
Phenanthrene	<0.015 mg/kg	TM218		0.619 M	0.686 M	0.493 M	0.452 M	0.625 M	0.533 M
Anthracene	<0.016 mg/kg	TM218		0.134 M	0.131 M	0.118 M	0.0979 M	0.144 M	0.145 M
Fluoranthene	<0.017 mg/kg	TM218		0.991 M	1.43 M	0.802 M	0.841 M	1.28 M	1.22 M
Pyrene	<0.015 mg/kg	TM218		1.06 M	1.66 M	0.792 M	0.953 M	1.4 M	1.26 M
Benz(a)anthracene	<0.014 mg/kg	TM218		0.783 M	1.52 M	0.567 M	0.758 M	1.22 M	0.861 M
Chrysene	<0.01 mg/kg	TM218		0.84 M	2.03 M	0.622 M	0.831 M	1.33 M	0.813 M
Benzo(b)fluoranthene	<0.015 mg/kg	TM218		1.3 M	2.97 M	0.98 M	1.26 M	2 M	1.23 M
Benzo(k)fluoranthene	<0.014 mg/kg	TM218		0.552 M	1.14 M	0.39 M	0.363 M	0.663 M	0.514 M
Benzo(a)pyrene	<0.015 mg/kg	TM218		1.15 M	2.06 M	0.649 M	0.948 M	1.35 M	0.95 M
Indeno(1,2,3-cd)pyrene	<0.018 mg/kg	TM218		0.859 M	1.38 M	0.421 M	0.643 M	0.925 M	0.663 M
Dibenzo(a,h)anthracene	<0.023 mg/kg	TM218		0.247 M	0.48 M	0.124 M	0.183 M	0.306 M	0.195 M
Benzo(g,h,i)perylene	<0.024 mg/kg	TM218		1.12 M	1.7 M	0.548 M	0.855 M	1.2 M	0.882 M
PAH, Total Detected USEPA 16	<0.118 mg/kg	TM218		9.92	17.4	6.72	8.43	12.7	9.54

CERTIFICATE OF ANALYSIS

SDG:	171125-14	**Client Reference:**		**Report Number:**	439663
Location:	Llanwern	**Order Number:**	LLA372	**Superseded Report:**	437932

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	CBPU4_5-68
			Depth (m)	0.00 - 0.00
			Sample Type	Soil/Solid (S)
			Date Sampled	24/11/2017
			Sample Time	00:00
			Date Received	25/11/2017
			SDG Ref	171125-14
			Lab Sample No.(s)	16632962
			AGS Reference	
Naphthalene-d8 % recovery**	%	TM218		90.7
Acenaphthene-d10 % recovery**	%	TM218		93.6
Phenanthrene-d10 % recovery**	%	TM218		88.8
Chrysene-d12 % recovery**	%	TM218		95.8
Perylene-d12 % recovery**	%	TM218		97.7
Naphthalene	<0.009 mg/kg	TM218		0.0919 M
Acenaphthylene	<0.012 mg/kg	TM218		0.0158 M
Acenaphthene	<0.008 mg/kg	TM218		0.0394 M
Fluorene	<0.01 mg/kg	TM218		0.032 M
Phenanthrene	<0.015 mg/kg	TM218		0.34 M
Anthracene	<0.016 mg/kg	TM218		0.0693 M
Fluoranthene	<0.017 mg/kg	TM218		0.512 M
Pyrene	<0.015 mg/kg	TM218		0.466 M
Benz(a)anthracene	<0.014 mg/kg	TM218		0.432 M
Chrysene	<0.01 mg/kg	TM218		0.421 M
Benzo(b)fluoranthene	<0.015 mg/kg	TM218		0.771 M
Benzo(k)fluoranthene	<0.014 mg/kg	TM218		0.298 M
Benzo(a)pyrene	<0.015 mg/kg	TM218		0.561 M
Indeno(1,2,3-cd)pyrene	<0.018 mg/kg	TM218		0.399 M
Dibenzo(a,h)anthracene	<0.023 mg/kg	TM218		0.116 M
Benzo(g,h,i)perylene	<0.024 mg/kg	TM218		0.535 M
PAH, Total Detected USEPA 16	<0.118 mg/kg	TM218		5.1

Validated

CERTIFICATE OF ANALYSIS

SDG:	171125-14	**Client Reference:**		**Report Number:**	439663
Location:	Llanwern	**Order Number:**	LLA372	**Superseded Report:**	437932

TPH CWG (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	CBPU4_5-33	CBPU4_5-51	CBPU4_5-52	CBPU4_5-53	CBPU4_5-54	CBPU4_5-55
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	24/11/2017	24/11/2017	24/11/2017	24/11/2017	24/11/2017	24/11/2017
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	25/11/2017	25/11/2017	25/11/2017	25/11/2017	25/11/2017	25/11/2017
			SDG Ref	171125-14	171125-14	171125-14	171125-14	171125-14	171125-14
			Lab Sample No.(s)	16632886	16632969	16632975	16632982	16632988	16632996
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		88	91	82	86	95	91
GRO TOT (Moisture Corrected)	<0.044 mg/kg	TM089		<0.176 M	0.511 M	<0.176 M	<0.176 M	<0.176 M	<0.176 M
Methyl tertiary butyl ether (MTBE)	<0.005 mg/kg	TM089		<0.02 #	0.0271 #	<0.02 #	<0.02 #	<0.02 #	<0.02 #
Benzene	<0.01 mg/kg	TM089		<0.04 M	<0.04 M	<0.04 M	<0.04 M	<0.04 M	<0.04 M
Toluene	<0.002 mg/kg	TM089		<0.008 M	<0.008 M	<0.008 M	<0.008 M	<0.008 M	<0.008 M
Ethylbenzene	<0.003 mg/kg	TM089		<0.012 M	<0.012 M	<0.012 M	<0.012 M	<0.012 M	<0.012 M
m,p-Xylene	<0.006 mg/kg	TM089		<0.024 M	<0.024 M	<0.024 M	<0.024 M	<0.024 M	<0.024 M
o-Xylene	<0.003 mg/kg	TM089		<0.012 M	<0.012 M	<0.012 M	<0.012 M	<0.012 M	<0.012 M
sum of detected mpo xylene by GC	<0.009 mg/kg	TM089		<0.009	<0.009	<0.009	<0.009	<0.009	<0.009
sum of detected BTEX by GC	<0.024 mg/kg	TM089		<0.024	<0.024	<0.024	<0.024	<0.024	<0.024
Aliphatics >C5-C6	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Aliphatics >C6-C8	<0.01 mg/kg	TM089		<0.04	0.0678	<0.04	<0.04	<0.04	<0.04
Aliphatics >C8-C10	<0.01 mg/kg	TM089		<0.04	0.0599	<0.04	<0.04	<0.04	<0.04
Aliphatics >C10-C12	<0.01 mg/kg	TM089		<0.04	0.155	<0.04	<0.04	<0.04	<0.04
Aliphatics >C12-C16	<0.1 mg/kg	TM173		4.65	69.7	14.8	4.87	0.892	10.2
Aliphatics >C16-C21	<0.1 mg/kg	TM173		24.7	160	61.4	30.2	8.6	32.8
Aliphatics >C21-C35	<0.1 mg/kg	TM173		162	726	384	208	91.6	150
Aliphatics >C35-C44	<0.1 mg/kg	TM173		46.6	274	106	42.6	31.2	46.8
Total Aliphatics >C12-C44	<0.1 mg/kg	TM173		238	1230	567	286	132	239
Aromatics >EC5-EC7	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Aromatics >EC7-EC8	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Aromatics >EC8-EC10	<0.01 mg/kg	TM089		<0.04	0.0554	<0.04	<0.04	<0.04	<0.04
Aromatics >EC10-EC12	<0.01 mg/kg	TM089		<0.04	0.103	<0.04	<0.04	<0.04	<0.04
Aromatics >EC12-EC16	<0.1 mg/kg	TM173		1.43	20.8	2.44	1.78	<0.1	1.2
Aromatics >EC16-EC21	<0.1 mg/kg	TM173		13.2	68.8	22.4	13.4	8.01	12.9
Aromatics >EC21-EC35	<0.1 mg/kg	TM173		88	229	129	104	75.8	78.5
Aromatics >EC35-EC44	<0.1 mg/kg	TM173		44.6	126	94	43.7	88.5	91.1
Aromatics >EC40-EC44	<0.1 mg/kg	TM173		16.9	46.1	34.9	16.7	38.3	39.1
Total Aromatics >EC12-EC44	<0.1 mg/kg	TM173		147	444	248	163	172	184
Total Aliphatics & Aromatics >C5-C44	<0.1 mg/kg	TM173		385	1670	815	449	305	423

Validated

CERTIFICATE OF ANALYSIS

SDG:	171125-14	**Client Reference:**		**Report Number:**	439663
Location:	Llanwern	**Order Number:**	LLA372	**Superseded Report:**	437932

TPH CWG (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	CBPU4_5-56	CBPU4_5-57	CBPU4_5-58	CBPU4_5-59	CBPU4_5-60	CBPU4_5-61
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	24/11/2017	24/11/2017	24/11/2017	24/11/2017	24/11/2017	24/11/2017
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	25/11/2017	25/11/2017	25/11/2017	25/11/2017	25/11/2017	25/11/2017
			SDG Ref	171125-14	171125-14	171125-14	171125-14	171125-14	171125-14
			Lab Sample No.(s)	16633005	16633011	16633018	16632897	16632903	16632910
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		84	135	106	103	91	65
GRO TOT (Moisture Corrected)	<0.044 mg/kg	TM089		<0.176 M	<0.176 M	<0.176 M	<0.176 M	<0.176 M	<0.176 M
Methyl tertiary butyl ether (MTBE)	<0.005 mg/kg	TM089		<0.02 #	<0.02 #	<0.02 #	<0.02 #	<0.02 #	<0.02 #
Benzene	<0.01 mg/kg	TM089		<0.04 M	<0.04 M	<0.04 M	<0.04 M	<0.04 M	<0.04 M
Toluene	<0.002 mg/kg	TM089		<0.008 M	<0.008 M	<0.008 M	<0.008 M	<0.008 M	<0.008 M
Ethylbenzene	<0.003 mg/kg	TM089		<0.012 M	<0.012 M	<0.012 M	<0.012 M	<0.012 M	<0.012 M
m,p-Xylene	<0.006 mg/kg	TM089		<0.024 M	<0.024 M	<0.024 M	<0.024 M	<0.024 M	<0.024 M
o-Xylene	<0.003 mg/kg	TM089		<0.012 M	<0.012 M	<0.012 M	<0.012 M	<0.012 M	<0.012 M
sum of detected mpo xylene by GC	<0.009 mg/kg	TM089		<0.009	<0.009	<0.009	<0.009	<0.009	<0.009
sum of detected BTEX by GC	<0.024 mg/kg	TM089		<0.024	<0.024	<0.024	<0.024	<0.024	<0.024
Aliphatics >C5-C6	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Aliphatics >C6-C8	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Aliphatics >C8-C10	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Aliphatics >C10-C12	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Aliphatics >C12-C16	<0.1 mg/kg	TM173		3.22	4.08	2.36	2.5	6.13	1.05
Aliphatics >C16-C21	<0.1 mg/kg	TM173		15.4	11.3	14.2	11.7	28.6	13.4
Aliphatics >C21-C35	<0.1 mg/kg	TM173		127	62.7	141	120	240	139
Aliphatics >C35-C44	<0.1 mg/kg	TM173		29.6	11.8	78.7	26.4	40.4	25.9
Total Aliphatics >C12-C44	<0.1 mg/kg	TM173		175	89.9	236	161	315	180
Aromatics >EC5-EC7	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Aromatics >EC7-EC8	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Aromatics >EC8-EC10	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Aromatics >EC10-EC12	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Aromatics >EC12-EC16	<0.1 mg/kg	TM173		<0.1	1.59	0.399	0.249	2.48	0.607
Aromatics >EC16-EC21	<0.1 mg/kg	TM173		7.37	6.52	10.6	6.57	14.9	10.3
Aromatics >EC21-EC35	<0.1 mg/kg	TM173		64.1	40.4	104	64.7	129	92
Aromatics >EC35-EC44	<0.1 mg/kg	TM173		60.7	17.4	170	32.4	56.5	42
Aromatics >EC40-EC44	<0.1 mg/kg	TM173		24.1	6.62	78.3	13.9	22.2	17.6
Total Aromatics >EC12-EC44	<0.1 mg/kg	TM173		132	65.9	285	104	203	145
Total Aliphatics & Aromatics >C5-C44	<0.1 mg/kg	TM173		308	156	521	265	518	324

Validated

CERTIFICATE OF ANALYSIS

SDG:	171125-14	**Client Reference:**		**Report Number:**	439663
Location:	Llanwern	**Order Number:**	LLA372	**Superseded Report:**	437932

TPH CWG (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	CBPU4_5-62	CBPU4_5-63	CBPU4_5-64	CBPU4_5-65	CBPU4_5-66	CBPU4_5-67
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	24/11/2017	24/11/2017	24/11/2017	24/11/2017	24/11/2017	24/11/2017
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	25/11/2017	25/11/2017	25/11/2017	25/11/2017	25/11/2017	25/11/2017
			SDG Ref	171125-14	171125-14	171125-14	171125-14	171125-14	171125-14
			Lab Sample No.(s)	16632918	16632926	16632933	16632940	16632948	16632955
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		86	102	101	93	79	92
GRO TOT (Moisture Corrected)	<0.044 mg/kg	TM089		<0.176 M	<0.176 M	<0.176 M	<0.176 M	<0.176 M	0.312 M
Methyl tertiary butyl ether (MTBE)	<0.005 mg/kg	TM089		<0.02 #	<0.02 #	<0.02 #	<0.02 #	<0.02 #	<0.02 #
Benzene	<0.01 mg/kg	TM089		<0.04 M	<0.04 M	<0.04 M	<0.04 M	<0.04 M	<0.04 M
Toluene	<0.002 mg/kg	TM089		<0.008 M	<0.008 M	<0.008 M	<0.008 M	<0.008 M	<0.008 M
Ethylbenzene	<0.003 mg/kg	TM089		<0.012 M	<0.012 M	<0.012 M	<0.012 M	<0.012 M	<0.012 M
m,p-Xylene	<0.006 mg/kg	TM089		<0.024 M	<0.024 M	<0.024 M	<0.024 M	<0.024 M	<0.024 M
o-Xylene	<0.003 mg/kg	TM089		<0.012 M	<0.012 M	<0.012 M	<0.012 M	<0.012 M	<0.012 M
sum of detected mpo xylene by GC	<0.009 mg/kg	TM089		<0.009	<0.009	<0.009	<0.009	<0.009	<0.009
sum of detected BTEX by GC	<0.024 mg/kg	TM089		<0.024	<0.024	<0.024	<0.024	<0.024	<0.024
Aliphatics >C5-C6	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Aliphatics >C6-C8	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Aliphatics >C8-C10	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Aliphatics >C10-C12	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	0.13
Aliphatics >C12-C16	<0.1 mg/kg	TM173		<0.1	2.26	<0.1	6.05	2.39	59.9
Aliphatics >C16-C21	<0.1 mg/kg	TM173		4.81	15.7	5.21	23.2	11.1	128
Aliphatics >C21-C35	<0.1 mg/kg	TM173		41.1	140	50.7	147	93	278
Aliphatics >C35-C44	<0.1 mg/kg	TM173		8.93	54.4	9.53	70.4	44.6	118
Total Aliphatics >C12-C44	<0.1 mg/kg	TM173		54.8	212	65.4	247	151	584
Aromatics >EC5-EC7	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Aromatics >EC7-EC8	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Aromatics >EC8-EC10	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	0.04
Aromatics >EC10-EC12	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	0.0866
Aromatics >EC12-EC16	<0.1 mg/kg	TM173		<0.1	1.56	<0.1	2.13	1.08	13.8
Aromatics >EC16-EC21	<0.1 mg/kg	TM173		3.74	11.9	4.97	11.1	8.12	49.9
Aromatics >EC21-EC35	<0.1 mg/kg	TM173		40.8	126	48.4	103	72.8	132
Aromatics >EC35-EC44	<0.1 mg/kg	TM173		35.2	81.7	37.5	107	58.9	95.3
Aromatics >EC40-EC44	<0.1 mg/kg	TM173		13.3	33.6	16.3	49.5	27.4	39.9
Total Aromatics >EC12-EC44	<0.1 mg/kg	TM173		79.8	222	90.8	223	141	291
Total Aliphatics & Aromatics >C5-C44	<0.1 mg/kg	TM173		135	434	156	470	292	875

CERTIFICATE OF ANALYSIS

SDG:	171125-14	**Client Reference:**		**Report Number:**	439663
Location:	Llanwern	**Order Number:**	LLA372	**Superseded Report:**	437932

TPH CWG (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	CBPU4_5-68
			Depth (m)	0.00 - 0.00
			Sample Type	Soil/Solid (S)
			Date Sampled	24/11/2017
			Sample Time	00:00
			Date Received	25/11/2017
			SDG Ref	171125-14
			Lab Sample No.(s)	16632962
			AGS Reference	
GRO Surrogate % recovery**	%	TM089		94
GRO TOT (Moisture Corrected)	<0.044 mg/kg	TM089		<0.176 M
Methyl tertiary butyl ether (MTBE)	<0.005 mg/kg	TM089		<0.02 #
Benzene	<0.01 mg/kg	TM089		<0.04 M
Toluene	<0.002 mg/kg	TM089		<0.008 M
Ethylbenzene	<0.003 mg/kg	TM089		<0.012 M
m,p-Xylene	<0.006 mg/kg	TM089		<0.024 M
o-Xylene	<0.003 mg/kg	TM089		<0.012 M
sum of detected mpo xylene by GC	<0.009 mg/kg	TM089		<0.009
sum of detected BTEX by GC	<0.024 mg/kg	TM089		<0.024
Aliphatics >C5-C6	<0.01 mg/kg	TM089		<0.04
Aliphatics >C6-C8	<0.01 mg/kg	TM089		<0.04
Aliphatics >C8-C10	<0.01 mg/kg	TM089		<0.04
Aliphatics >C10-C12	<0.01 mg/kg	TM089		<0.04
Aliphatics >C12-C16	<0.1 mg/kg	TM173		6.37
Aliphatics >C16-C21	<0.1 mg/kg	TM173		23.5
Aliphatics >C21-C35	<0.1 mg/kg	TM173		90.8
Aliphatics >C35-C44	<0.1 mg/kg	TM173		29.7
Total Aliphatics >C12-C44	<0.1 mg/kg	TM173		150
Aromatics >EC5-EC7	<0.01 mg/kg	TM089		<0.04
Aromatics >EC7-EC8	<0.01 mg/kg	TM089		<0.04
Aromatics >EC8-EC10	<0.01 mg/kg	TM089		<0.04
Aromatics >EC10-EC12	<0.01 mg/kg	TM089		<0.04
Aromatics >EC12-EC16	<0.1 mg/kg	TM173		0.367
Aromatics >EC16-EC21	<0.1 mg/kg	TM173		8.58
Aromatics >EC21-EC35	<0.1 mg/kg	TM173		45.3
Aromatics >EC35-EC44	<0.1 mg/kg	TM173		53.4
Aromatics >EC40-EC44	<0.1 mg/kg	TM173		22.2
Total Aromatics >EC12-EC44	<0.1 mg/kg	TM173		108
Total Aliphatics & Aromatics >C5-C44	<0.1 mg/kg	TM173		258

Validated

CERTIFICATE OF ANALYSIS

SDG:	171125-14	**Client Reference:**		**Report Number:**	439663
Location:	Llanwern	**Order Number:**	LLA372	**Superseded Report:**	437932

VOC MS (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	CBPU4_5-33	CBPU4_5-51	CBPU4_5-52	CBPU4_5-53	CBPU4_5-54	CBPU4_5-55
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	24/11/2017	24/11/2017	24/11/2017	24/11/2017	24/11/2017	24/11/2017
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	25/11/2017	25/11/2017	25/11/2017	25/11/2017	25/11/2017	25/11/2017
			SDG Ref	171125-14	171125-14	171125-14	171125-14	171125-14	171125-14
			Lab Sample No.(s)	16632886	16632969	16632975	16632982	16632988	16632996
			AGS Reference						
Naphthalene	<0.013 mg/kg	TM116		<0.13 M	<0.13 M	<0.013 M	<0.013 M	<0.013 M	<0.013 M

Validated

CERTIFICATE OF ANALYSIS

SDG:	171125-14	**Client Reference:**		**Report Number:**	439663
Location:	Llanwern	**Order Number:**	LLA372	**Superseded Report:**	437932

VOC MS (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	CBPU4_5-56	CBPU4_5-57	CBPU4_5-58	CBPU4_5-59	CBPU4_5-60	CBPU4_5-61
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	24/11/2017	24/11/2017	24/11/2017	24/11/2017	24/11/2017	24/11/2017
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	25/11/2017	25/11/2017	25/11/2017	25/11/2017	25/11/2017	25/11/2017
			SDG Ref	171125-14	171125-14	171125-14	171125-14	171125-14	171125-14
			Lab Sample No.(s)	16633005	16633011	16633018	16632897	16632903	16632910
			AGS Reference						
Naphthalene	<0.013 mg/kg	TM116		<0.013 M	<0.13 M	<0.013 M	<0.013 M	<0.13 M	<0.013 M

Validated

CERTIFICATE OF ANALYSIS

SDG:	171125-14	**Client Reference:**		**Report Number:**	439663
Location:	Llanwern	**Order Number:**	LLA372	**Superseded Report:**	437932

VOC MS (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	CBPU4_5-62	CBPU4_5-63	CBPU4_5-64	CBPU4_5-65	CBPU4_5-66	CBPU4_5-67
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	24/11/2017	24/11/2017	24/11/2017	24/11/2017	24/11/2017	24/11/2017
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	25/11/2017	25/11/2017	25/11/2017	25/11/2017	25/11/2017	25/11/2017
			SDG Ref	171125-14	171125-14	171125-14	171125-14	171125-14	171125-14
			Lab Sample No.(s)	16632918	16632926	16632933	16632940	16632948	16632955
			AGS Reference						
Naphthalene	<0.013 mg/kg	TM116		<0.013 M	<0.013 M	<0.013 M	<0.13 M	<0.13 M	<0.013 M

Validated

CERTIFICATE OF ANALYSIS

SDG:	171125-14	**Client Reference:**		**Report Number:**	439663
Location:	Llanwern	**Order Number:**	LLA372	**Superseded Report:**	437932

VOC MS (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	CBPU4_5-68
			Depth (m)	0.00 - 0.00
			Sample Type	Soil/Solid (S)
			Date Sampled	24/11/2017
			Sample Time	00:00
			Date Received	25/11/2017
			SDG Ref	171125-14
			Lab Sample No.(s)	16632962
			AGS Reference	
Naphthalene	<0.013 mg/kg	TM116		<0.13 M

CERTIFICATE OF ANALYSIS

SDG:	171125-14	**Client Reference:**		**Report Number:**	439663
Location:	Llanwern	**Order Number:**	LLA372	**Superseded Report:**	437932

Asbestos Quantification - Full

		Additional Asbestos Components (Using TM048)	Analysts Comments	Asbestos Quantification - Gravimetric - %	Asbestos Quantification - PCOM Evaluation - %	Asbestos Quantification - Total - %
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	CBPU4_5-52 0.00 - 0.00 SOLID 24/11/2017 00:00:00 03/01/2018 07:37:43 171125-14 16632975 TM304	None (#)	N/A	0.0049 (#)	<0.001 (#)	0.0049 (#)
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	CBPU4_5-62 0.00 - 0.00 SOLID 24/11/2017 00:00:00 03/01/2018 07:32:34 171125-14 16632918 TM304	None (#)	N/C	<0.001 (#)	<0.001 (#)	<0.001 (#)
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	CBPU4_5-66 0.00 - 0.00 SOLID 24/11/2017 00:00:00 03/01/2018 07:29:13 171125-14 16632948 TM304	None (#)	N/C	<0.001 (#)	<0.001 (#)	<0.001 (#)

Table of Results - Appendix

Method No	Reference	Description
ASB_PREP		
PM001		Preparation of Samples for Metals Analysis
PM024	Modified BS 1377	Soil preparation including homogenisation, moisture screens of soils for Asbestos Containing Material
SUB (ASB)		
TM024	Method 4500A & B, AWWA/APHA, 20th Ed., 1999	Determination of Exchangeable Ammonium and Ammoniacal Nitrogen as N by titration on solids
TM062 (S)	National Grid Property Holdings Methods for the Collection & Analysis of Samples from National Grid Sites version 1 Sec 3.9	Determination of Phenols in Soils by HPLC
TM089	Modified: US EPA Methods 8020 & 602	Determination of Gasoline Range Hydrocarbons (GRO) and BTEX (MTBE) compounds by Headspace GC-FID (C4-C12)
TM116	Modified: US EPA Method 8260, 8120, 8020, 624, 610 & 602	Determination of Volatile Organic Compounds by Headspace / GC-MS
TM132	In - house Method	ELTRA CS800 Operators Guide
TM133	BS 1377: Part 3 1990;BS 6068-2.5	Determination of pH in Soil and Water using the GLpH pH Meter
TM153	Method 4500A,B,C, I, M AWWA/APHA, 20th Ed., 1999	Determination of Total Cyanide, Free (Easily Liberatable) Cyanide and Thiocyanate using the Skalar SANS+ System Segmented Flow Analyser
TM173	Analysis of Petroleum Hydrocarbons in Environmental Media – Total Petroleum Hydrocarbon Criteria	Determination of Speciated Extractable Petroleum Hydrocarbons in Soils by GC-FID
TM181	US EPA Method 6010B	Determination of Routine Metals in Soil by iCap 6500 Duo ICP-OES
TM218	Determination of PAH by GCMS Microwave extraction	The determination of PAH in soil samples by microwave extraction and GC-MS
TM221	Inductively Coupled Plasma - Atomic Emission Spectroscopy. An Atlas of Spectral Information: Winge, Fassel, Peterson and Floyd	Determination of Acid extractable Sulphate in Soils by IRIS Emission Spectrometer
TM224	US EPA Method 6010B	Determination of Alkaline Metals by iCap 6500 Duo ICP-OES
TM243		Mixed Anions In Soils By Kone
TM304	HSE Contract research Report no 83/1996	Asbestos Quantification in Soil: Fibres identified by morphology only

NA = not applicable.

Chemical testing (unless subcontracted) performed at ALS Environmental Hawarden (Method codes TM) or ALS Environmental Aberdeen (Method codes S).

CERTIFICATE OF ANALYSIS

SDG:	171125-14	**Client Reference:**		**Report Number:**	439663
Location:	Llanwern	**Order Number:**	LLA372	**Superseded Report:**	437932

Test Completion Dates

Lab Sample No(s)	16632886	16632969	16632975	16632982	16632988	16632996	16633005	16633011	16633018	16632897
Customer Sample Ref.	CBPU4_5-33	CBPU4_5-51	CBPU4_5-52	CBPU4_5-53	CBPU4_5-54	CBPU4_5-55	CBPU4_5-56	CBPU4_5-57	CBPU4_5-58	CBPU4_5-59
AGS Ref.										
Depth	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
Alkali Metals by iCap-OES (Soil)	11-Dec-2017		12-Dec-2017		11-Dec-2017		11-Dec-2017		12-Dec-2017	
Ammonium Soil by Titration	05-Dec-2017	01-Dec-2017	05-Dec-2017	01-Dec-2017	01-Dec-2017	01-Dec-2017	01-Dec-2017	05-Dec-2017	01-Dec-2017	01-Dec-2017
Anions by Kone (soil)	05-Dec-2017		05-Dec-2017		05-Dec-2017		05-Dec-2017		05-Dec-2017	
Asbestos ID*	20-Dec-2017		20-Dec-2017		20-Dec-2017		20-Dec-2017		20-Dec-2017	
Asbestos Quantification - Full			10-Jan-2018							
Cyanide Comp/Free/Total/Thiocyanate	04-Dec-2017	05-Dec-2017	04-Dec-2017	04-Dec-2017	04-Dec-2017	05-Dec-2017	05-Dec-2017	05-Dec-2017	05-Dec-2017	04-Dec-2017
EPH CWG (Aliphatic) GC (S)	01-Dec-2017	30-Nov-2017	04-Dec-2017	04-Dec-2017	04-Dec-2017	04-Dec-2017	04-Dec-2017	01-Dec-2017	04-Dec-2017	04-Dec-2017
EPH CWG (Aromatic) GC (S)	01-Dec-2017	30-Nov-2017	04-Dec-2017	04-Dec-2017	04-Dec-2017	04-Dec-2017	04-Dec-2017	01-Dec-2017	04-Dec-2017	04-Dec-2017
GRO by GC-FID (S)	04-Dec-2017	04-Dec-2017	04-Dec-2017	04-Dec-2017	05-Dec-2017	04-Dec-2017	04-Dec-2017	04-Dec-2017	05-Dec-2017	05-Dec-2017
Metals in solid samples by OES	06-Dec-2017	06-Dec-2017	05-Dec-2017	06-Dec-2017	06-Dec-2017	06-Dec-2017	06-Dec-2017	06-Dec-2017	06-Dec-2017	06-Dec-2017
PAH by GCMS	04-Dec-2017	04-Dec-2017	05-Dec-2017	04-Dec-2017	04-Dec-2017	04-Dec-2017	04-Dec-2017	04-Dec-2017	04-Dec-2017	04-Dec-2017
pH	05-Dec-2017	04-Dec-2017	05-Dec-2017	01-Dec-2017	05-Dec-2017	01-Dec-2017	05-Dec-2017	04-Dec-2017	05-Dec-2017	04-Dec-2017
Phenols by HPLC (S)	04-Dec-2017	04-Dec-2017	04-Dec-2017	04-Dec-2017	04-Dec-2017	04-Dec-2017	04-Dec-2017	04-Dec-2017	04-Dec-2017	04-Dec-2017
Sample description	28-Nov-2017	28-Nov-2017	28-Nov-2017	28-Nov-2017	28-Nov-2017	28-Nov-2017	28-Nov-2017	28-Nov-2017	28-Nov-2017	28-Nov-2017
Total Organic Carbon	30-Nov-2017	30-Nov-2017	30-Nov-2017	30-Nov-2017	30-Nov-2017	30-Nov-2017	01-Dec-2017	30-Nov-2017	01-Dec-2017	30-Nov-2017
Total Sulphate	06-Dec-2017		06-Dec-2017		06-Dec-2017		06-Dec-2017		06-Dec-2017	
Total Sulphur	30-Nov-2017		30-Nov-2017		30-Nov-2017		04-Dec-2017		04-Dec-2017	
TPH CWG GC (S)	04-Dec-2017	04-Dec-2017	04-Dec-2017	04-Dec-2017	05-Dec-2017	04-Dec-2017	04-Dec-2017	04-Dec-2017	05-Dec-2017	05-Dec-2017
VOC MS (S)	04-Dec-2017	04-Dec-2017	01-Dec-2017	01-Dec-2017	01-Dec-2017	01-Dec-2017	01-Dec-2017	04-Dec-2017	01-Dec-2017	01-Dec-2017

Lab Sample No(s)	16632903	16632910	16632918	16632926	16632933	16632940	16632948	16632955	16632962
Customer Sample Ref.	CBPU4_5-60	CBPU4_5-61	CBPU4_5-62	CBPU4_5-63	CBPU4_5-64	CBPU4_5-65	CBPU4_5-66	CBPU4_5-67	CBPU4_5-68
AGS Ref.									
Depth	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
Alkali Metals by iCap-OES (Soil)	12-Dec-2017		11-Dec-2017		12-Dec-2017		12-Dec-2017		12-Dec-2017
Ammonium Soil by Titration	05-Dec-2017	01-Dec-2017	01-Dec-2017	01-Dec-2017	05-Dec-2017	01-Dec-2017	01-Dec-2017	05-Dec-2017	01-Dec-2017
Anions by Kone (soil)	05-Dec-2017		05-Dec-2017		05-Dec-2017		05-Dec-2017		05-Dec-2017
Asbestos ID*	20-Dec-2017		20-Dec-2017		20-Dec-2017		20-Dec-2017		20-Dec-2017
Asbestos Quantification - Full			10-Jan-2018				10-Jan-2018		
Cyanide Comp/Free/Total/Thiocyanate	05-Dec-2017	04-Dec-2017	05-Dec-2017	05-Dec-2017	04-Dec-2017	05-Dec-2017	04-Dec-2017	04-Dec-2017	04-Dec-2017
EPH CWG (Aliphatic) GC (S)	30-Nov-2017	04-Dec-2017	04-Dec-2017	30-Nov-2017	04-Dec-2017	30-Nov-2017	30-Nov-2017	01-Dec-2017	04-Dec-2017
EPH CWG (Aromatic) GC (S)	30-Nov-2017	04-Dec-2017	04-Dec-2017	30-Nov-2017	04-Dec-2017	30-Nov-2017	30-Nov-2017	01-Dec-2017	04-Dec-2017
GRO by GC-FID (S)	05-Dec-2017	04-Dec-2017	04-Dec-2017	05-Dec-2017	04-Dec-2017	05-Dec-2017	04-Dec-2017	05-Dec-2017	05-Dec-2017
Metals in solid samples by OES	05-Dec-2017	06-Dec-2017	06-Dec-2017	06-Dec-2017	05-Dec-2017	06-Dec-2017	05-Dec-2017	06-Dec-2017	06-Dec-2017
PAH by GCMS	04-Dec-2017	01-Dec-2017	04-Dec-2017	04-Dec-2017	04-Dec-2017	01-Dec-2017	01-Dec-2017	04-Dec-2017	04-Dec-2017
pH	04-Dec-2017	04-Dec-2017	05-Dec-2017	01-Dec-2017	04-Dec-2017	30-Nov-2017	01-Dec-2017	05-Dec-2017	05-Dec-2017
Phenols by HPLC (S)	04-Dec-2017	04-Dec-2017	05-Dec-2017	04-Dec-2017	04-Dec-2017	02-Dec-2017	04-Dec-2017	04-Dec-2017	04-Dec-2017
Sample description	28-Nov-2017	28-Nov-2017	28-Nov-2017	28-Nov-2017	28-Nov-2017	28-Nov-2017	28-Nov-2017	28-Nov-2017	28-Nov-2017
Total Organic Carbon	01-Dec-2017	30-Nov-2017	30-Nov-2017	30-Nov-2017	30-Nov-2017	30-Nov-2017	30-Nov-2017	30-Nov-2017	30-Nov-2017
Total Sulphate	05-Dec-2017		06-Dec-2017		06-Dec-2017		06-Dec-2017		06-Dec-2017
Total Sulphur	04-Dec-2017		30-Nov-2017		30-Nov-2017		30-Nov-2017		30-Nov-2017
TPH CWG GC (S)	05-Dec-2017	04-Dec-2017	04-Dec-2017	05-Dec-2017	04-Dec-2017	05-Dec-2017	04-Dec-2017	05-Dec-2017	05-Dec-2017
VOC MS (S)	04-Dec-2017	01-Dec-2017	01-Dec-2017	01-Dec-2017	01-Dec-2017	04-Dec-2017	04-Dec-2017	01-Dec-2017	04-Dec-2017

ALS Environmental Ltd
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www.alsenvironmental.co.uk

Ms Foster
ALS Life Sciences Limited
Units 7 & 8 Hawarden Business Park
Manor Road
Hawarden
Deeside CH5 3US

19 December 2017

Test Report: COV/1474908/2017

Dear Ms Foster

Analysis of your sample(s) submitted on 05 December 2017 is now complete and we have pleasure in enclosing the appropriate test report(s).

An invoice for the analysis carried out will be sent under separate cover.

Should you have any queries regarding this report(s) or any part of our service, please contact Customer Services on +44 (0)24 7642 1213 who will be happy to discuss your requirements.

If you would like to arrange any further analysis, please contact Customer Services. To arrange container delivery or sample collection, please call the Couriers Department directly on 024 7685 6562.

Thank you for using ALS Environmental Ltd and we look forward to receiving your next samples.

Yours Sincerely,

Signed:

Name: P. Patel

Title: Inorganic Team Leader

1314
Certificate No. GB97/10269
Environmental Management Systems
OHS 542058
This communication has been sent to you by ALS Environmental Ltd. Registered in England and Wales. Registration No.02148934. Registered Office: ALS Environmental Limited, Torrington Avenue, Coventry, CV4 9GU.

Report Summary

ANALYSED BY

Ms Carrie Foster
ALS Life Sciences Limited
Units 7 & 8 Hawarden Business Park
Manor Road
Hawarden
Deeside
CH5 3US

Date of Issue: **19 December 2017**

Report Number: **COV/1474908/2017** Issue **1**

This issue replaces all previous issues

Job Description: 2016 Analysis

Number of Samples included in this report **10**

Number of Test Results included in this report **20**

Job Received: **05 December 2017**

Analysis Commenced: **07 December 2017**

Signed:

Name: **P. Patel** Date: **19 December 2017**

Title: **Inorganic Team Leader**

ALS Environmental Ltd was not responsible for sampling unless otherwise stated.

Information on the methods of analysis and performance characteristics are available on request.
Opinions and interpretations expressed herein are outside the scope of UKAS accreditation. The results relate only to the items tested.
Tests marked 'Not UKAS Accredited' in this Report/Certificate are not included in the UKAS Accreditation Schedule for our laboratory.

This communication has been sent to you by ALS Environmental Ltd. Registered in England and Wales. Registration No. 02148934. Registered Office: ALS Environmental Limited, Torrington Avenue, Coventry, CV4 9GU.
(c) ALS Environmental Ltd 2017. All rights reserved. We, ALS Environmental Ltd, are the owner of all copyright in this report. You must not copy, reproduce, amend or adapt this report, its contents or any format in which it is delivered without our prior written agreement. If you copy, reproduce, amend, or adapt this report in any way without our agreement you will be liable for any damage or loss to us. In the event of a dispute the copy of the report held by us shall be the reference copy.

Certificate of Analysis

ANALYSED BY

Report Number:	**COV/1474908/2017**	Issue	**1**
Laboratory Number:	**16645175**	Sample	**1** of **10**
Sample Source:	**ALS Life Sciences Limited**		
Sample Point Description:			
Sample Description:	**16671667 CBPU4_5-33**		
Sample Matrix:	**Not In Project**		
Sample Date/Time:	**24 November 2017**		
Sample Received:	**05 December 2017**		
Analysis Complete:	**07 December 2017**		

Test Description	Result	Units	Analysis Date	Accreditation	Method
Description of Sample	Analyst Com	Text	07/12/2017	N Cov	70
Asbestos Identification	Analyst Com	Text	07/12/2017	N Cov	70

Analyst Comments for 16645175: ASBESTOS COMMENTS Asbestos ID: Non Detected, Description of Sample: Soil

This issue replaces all previous issues
Accreditation Codes: Y = UKAS / ISO17025 Accredited, N = Not UKAS / ISO17025 Accredited, M = MCERTS.
Analysed at: CHE = Chester(CH4 9EP), CTD = Coatbridge(ML5 4FR), COV = Coventry(CV4 9GU), OTT = Otterbourne(SO21 2SW), S = Subcontracted, TRB = Subcontracted to Trowbridge(BA14 0XD), WAK = Wakefield(WF5 9TG).
For Microbiological determinands 0 or ND=Not Detected, For Legionella ND=Not Detected in volume of sample filtered. The LOD for the Legionella analysis will increase where the volume analysed is <1000g (1g is approximately equivalent to 1ml for sample volume analysed).
I/S=Insufficient sample For soil/sludge samples: AR=As received, DW=Dry weight.

Signed:

Name: **P. Patel** Date: **19 December 2017**

Title: **Inorganic Team Leader**

Certificate of Analysis

ANALYSED BY

Report Number:	**COV/1474908/2017**	Issue	**1**
Laboratory Number:	**16645176**	Sample	**2** of **10**
Sample Source:	**ALS Life Sciences Limited**		
Sample Point Description:			
Sample Description:	**16671652 CBPU4_5-52**		
Sample Matrix:	**Not In Project**		
Sample Date/Time:	**24 November 2017**		
Sample Received:	**05 December 2017**		
Analysis Complete:	**07 December 2017**		

Test Description	Result	Units	Analysis Date	Accreditation	Method
Description of Sample	Analyst Com	Text	07/12/2017	N Cov	70
Asbestos Identification	Analyst Com	Text	07/12/2017	N Cov	70

Analyst Comments for 16645176: ASBESTOS COMMENTS Asbestos ID: Chrysotile, Description of Sample: Fibres in Soil

This issue replaces all previous issues
Accreditation Codes: Y = UKAS / ISO17025 Accredited, N = Not UKAS / ISO17025 Accredited, M = MCERTS.
Analysed at: CHE = Chester(CH4 9EP), CTD = Coatbridge(ML5 4FR), COV = Coventry(CV4 9GU), OTT = Otterbourne(SO21 2SW), S = Subcontracted, TRB = Subcontracted to Trowbridge(BA14 0XD), WAK = Wakefield(WF5 9TG).
For Microbiological determinands 0 or ND=Not Detected, For Legionella ND=Not Detected in volume of sample filtered. The LOD for the Legionella analysis will increase where the volume analysed is <1000g (1g is approximately equivalent to 1ml for sample volume analysed).
I/S=Insufficient sample For soil/sludge samples: AR=As received, DW=Dry weight.

Signed: P. Patel

Name: **P. Patel** Date: **19 December 2017**

Title: **Inorganic Team Leader**

Certificate of Analysis

ANALYSED BY

Report Number:	**COV/1474908/2017**	Issue	**1**
Laboratory Number:	**16645177**	Sample	**3** of **10**
Sample Source:	**ALS Life Sciences Limited**		
Sample Point Description:			
Sample Description:	**16671453 CBPU4_5-54**		
Sample Matrix:	**Not In Project**		
Sample Date/Time:	**24 November 2017**		
Sample Received:	**05 December 2017**		
Analysis Complete:	**07 December 2017**		

Test Description	Result	Units	Analysis Date	Accreditation	Method
Description of Sample	Analyst Com	Text	07/12/2017	N Cov	70
Asbestos Identification	Analyst Com	Text	07/12/2017	N Cov	70

Analyst Comments for 16645177: ASBESTOS COMMENTS Asbestos ID: Non Detected, Description of Sample: Soil

This issue replaces all previous issues
Accreditation Codes: Y = UKAS / ISO17025 Accredited, N = Not UKAS / ISO17025 Accredited, M = MCERTS.
Analysed at: CHE = Chester(CH4 9EP), CTD = Coatbridge(ML5 4FR), COV = Coventry(CV4 9GU), OTT = Otterbourne(SO21 2SW), S = Subcontracted, TRB = Subcontracted to Trowbridge(BA14 0XD), WAK = Wakefield(WF5 9TG).
For Microbiological determinands 0 or ND=Not Detected, For Legionella ND=Not Detected in volume of sample filtered. The LOD for the Legionella analysis will increase where the volume analysed is <1000g (1g is approximately equivalent to 1ml for sample volume analysed).
I/S=Insufficient sample For soil/sludge samples: AR=As received, DW=Dry weight.

Signed:

Name: **P. Patel** Date: **19 December 2017**

Title: **Inorganic Team Leader**

Certificate of Analysis

ANALYSED BY

Report Number:	**COV/1474908/2017**	Issue	**1**
Laboratory Number:	**16645178**	Sample	**4** of **10**
Sample Source:	**ALS Life Sciences Limited**		
Sample Point Description:			
Sample Description:	**16671664 CBPU4_5-56**		
Sample Matrix:	**Not In Project**		
Sample Date/Time:	**24 November 2017**		
Sample Received:	**05 December 2017**		
Analysis Complete:	**07 December 2017**		

Test Description	Result	Units	Analysis Date	Accreditation	Method
Description of Sample	Analyst Com	Text	07/12/2017	N Cov	70
Asbestos Identification	Analyst Com	Text	07/12/2017	N Cov	70

Analyst Comments for 16645178: ASBESTOS COMMENTS Asbestos ID: Non Detected, Description of Sample: Soil

This issue replaces all previous issues
Accreditation Codes: Y = UKAS / ISO17025 Accredited, N = Not UKAS / ISO17025 Accredited, M = MCERTS.
Analysed at: CHE = Chester(CH4 9EP), CTD = Coatbridge(ML5 4FR), COV = Coventry(CV4 9GU), OTT = Otterbourne(SO21 2SW), S = Subcontracted, TRB = Subcontracted to Trowbridge(BA14 0XD), WAK = Wakefield(WF5 9TG).
For Microbiological determinands 0 or ND=Not Detected, For Legionella ND=Not Detected in volume of sample filtered. The LOD for the Legionella analysis will increase where the volume analysed is <1000g (1g is approximately equivalent to 1ml for sample volume analysed).
I/S=Insufficient sample For soil/sludge samples: AR=As received, DW=Dry weight.

Signed:

Name: **P. Patel** Date: **19 December 2017**

Title: **Inorganic Team Leader**

Certificate of Analysis

ANALYSED BY

Report Number:	**COV/1474908/2017**	Issue	**1**
Laboratory Number:	**16645179**	Sample	**5** of **10**
Sample Source:	**ALS Life Sciences Limited**		
Sample Point Description:			
Sample Description:	**16671670 CBPU4_5-58**		
Sample Matrix:	**Not In Project**		
Sample Date/Time:	**24 November 2017**		
Sample Received:	**05 December 2017**		
Analysis Complete:	**07 December 2017**		

Test Description	Result	Units	Analysis Date	Accreditation	Method
Description of Sample	Analyst Com	Text	07/12/2017	N Cov	70
Asbestos Identification	Analyst Com	Text	07/12/2017	N Cov	70

Analyst Comments for 16645179: ASBESTOS COMMENTS Asbestos ID: Non Detected, Description of Sample: Soil

This issue replaces all previous issues
Accreditation Codes: Y = UKAS / ISO17025 Accredited, N = Not UKAS / ISO17025 Accredited, M = MCERTS.
Analysed at: CHE = Chester(CH4 9EP), CTD = Coatbridge(ML5 4FR), COV = Coventry(CV4 9GU), OTT = Otterbourne(SO21 2SW), S = Subcontracted, TRB = Subcontracted to Trowbridge(BA14 0XD), WAK = Wakefield(WF5 9TG).
For Microbiological determinands 0 or ND=Not Detected, For Legionella ND=Not Detected in volume of sample filtered. The LOD for the Legionella analysis will increase where the volume analysed is <1000g (1g is approximately equivalent to 1ml for sample volume analysed).
I/S=Insufficient sample For soil/sludge samples: AR=As received, DW=Dry weight.

Signed: P. Patel

Name: **P. Patel** Date: **19 December 2017**

Title: **Inorganic Team Leader**

Certificate of Analysis

ANALYSED BY

Report Number:	**COV/1474908/2017**	Issue	**1**
Laboratory Number:	**16645180**	Sample	**6** of **10**
Sample Source:	**ALS Life Sciences Limited**		
Sample Point Description:			
Sample Description:	**16671489 CBPU4_5-60**		
Sample Matrix:	**Not In Project**		
Sample Date/Time:	**24 November 2017**		
Sample Received:	**05 December 2017**		
Analysis Complete:	**07 December 2017**		

Test Description	Result	Units	Analysis Date	Accreditation	Method
Description of Sample	Analyst Com	Text	07/12/2017	N Cov	70
Asbestos Identification	Analyst Com	Text	07/12/2017	N Cov	70

Analyst Comments for 16645180: ASBESTOS COMMENTS Asbestos ID: Non Detected, Description of Sample: Soil

This issue replaces all previous issues
Accreditation Codes: Y = UKAS / ISO17025 Accredited, N = Not UKAS / ISO17025 Accredited, M = MCERTS.
Analysed at: CHE = Chester(CH4 9EP), CTD = Coatbridge(ML5 4FR), COV = Coventry(CV4 9GU), OTT = Otterbourne(SO21 2SW), S = Subcontracted, TRB = Subcontracted to Trowbridge(BA14 0XD), WAK = Wakefield(WF5 9TG).
For Microbiological determinands 0 or ND=Not Detected, For Legionella ND=Not Detected in volume of sample filtered. The LOD for the Legionella analysis will increase where the volume analysed is <1000g (1g is approximately equivalent to 1ml for sample volume analysed).
I/S=Insufficient sample For soil/sludge samples: AR=As received, DW=Dry weight.

Signed:

Name: **P. Patel** Date: **19 December 2017**

Title: **Inorganic Team Leader**

Certificate of Analysis

ANALYSED BY

Report Number:	**COV/1474908/2017**	Issue	**1**
Laboratory Number:	**16645181**	Sample	**7** of **10**
Sample Source:	**ALS Life Sciences Limited**		
Sample Point Description:			
Sample Description:	**16671502 CBPU4_5-62**		
Sample Matrix:	**Not In Project**		
Sample Date/Time:	**24 November 2017**		
Sample Received:	**05 December 2017**		
Analysis Complete:	**07 December 2017**		

Test Description	Result	Units	Analysis Date	Accreditation	Method
Description of Sample	Analyst Com	Text	07/12/2017	N Cov	70
Asbestos Identification	Analyst Com	Text	07/12/2017	N Cov	70

Analyst Comments for 16645181: ASBESTOS COMMENTS Asbestos ID: Chrysotile, Description of Sample: Fibres in Soil

This issue replaces all previous issues
Accreditation Codes: Y = UKAS / ISO17025 Accredited, N = Not UKAS / ISO17025 Accredited, M = MCERTS.
Analysed at: CHE = Chester(CH4 9EP), CTD = Coatbridge(ML5 4FR), COV = Coventry(CV4 9GU), OTT = Otterbourne(SO21 2SW), S = Subcontracted, TRB = Subcontracted to Trowbridge(BA14 0XD), WAK = Wakefield(WF5 9TG).
For Microbiological determinands 0 or ND=Not Detected, For Legionella ND=Not Detected in volume of sample filtered. The LOD for the Legionella analysis will increase where the volume analysed is <1000g (1g is approximately equivalent to 1ml for sample volume analysed).
I/S=Insufficient sample For soil/sludge samples: AR=As received, DW=Dry weight.

Signed: P. Patel

Name: **P. Patel** Date: **19 December 2017**

Title: **Inorganic Team Leader**

Certificate of Analysis

ANALYSED BY

Report Number:	**COV/1474908/2017**	Issue	**1**
Laboratory Number:	**16645182**	Sample	**8** of **10**
Sample Source:	**ALS Life Sciences Limited**		
Sample Point Description:			
Sample Description:	**16671520 CBPU4_5-64**		
Sample Matrix:	**Not In Project**		
Sample Date/Time:	**24 November 2017**		
Sample Received:	**05 December 2017**		
Analysis Complete:	**07 December 2017**		

Test Description	Result	Units	Analysis Date	Accreditation	Method
Description of Sample	Analyst Com	Text	07/12/2017	N Cov	70
Asbestos Identification	Analyst Com	Text	07/12/2017	N Cov	70

Analyst Comments for 16645182: ASBESTOS COMMENTS Asbestos ID: Non Detected, Description of Sample: Soil

This issue replaces all previous issues
Accreditation Codes: Y = UKAS / ISO17025 Accredited, N = Not UKAS / ISO17025 Accredited, M = MCERTS.
Analysed at: CHE = Chester(CH4 9EP), CTD = Coatbridge(ML5 4FR), COV = Coventry(CV4 9GU), OTT = Otterbourne(SO21 2SW), S = Subcontracted, TRB = Subcontracted to Trowbridge(BA14 0XD), WAK = Wakefield(WF5 9TG).
For Microbiological determinands 0 or ND=Not Detected, For Legionella ND=Not Detected in volume of sample filtered. The LOD for the Legionella analysis will increase where the volume analysed is <1000g (1g is approximately equivalent to 1ml for sample volume analysed).
I/S=Insufficient sample For soil/sludge samples: AR=As received, DW=Dry weight.

Signed:

Name: **P. Patel** Date: **19 December 2017**

Title: **Inorganic Team Leader**

Certificate of Analysis

ANALYSED BY

Report Number:	**COV/1474908/2017**	Issue	**1**
Laboratory Number:	**16645183**	Sample	**9** of **10**
Sample Source:	**ALS Life Sciences Limited**		
Sample Point Description:			
Sample Description:	**16671538 CBPU4_5-66**		
Sample Matrix:	**Not In Project**		
Sample Date/Time:	**24 November 2017**		
Sample Received:	**05 December 2017**		
Analysis Complete:	**07 December 2017**		

Test Description	Result	Units	Analysis Date	Accreditation	Method
Description of Sample	Analyst Com	Text	07/12/2017	N Cov	70
Asbestos Identification	Analyst Com	Text	07/12/2017	N Cov	70

Analyst Comments for 16645183: ASBESTOS COMMENTS Asbestos ID: Chrysotile, Description of Sample: Fibres in Soil

This issue replaces all previous issues
Accreditation Codes: Y = UKAS / ISO17025 Accredited, N = Not UKAS / ISO17025 Accredited, M = MCERTS.
Analysed at: CHE = Chester(CH4 9EP), CTD = Coatbridge(ML5 4FR), COV = Coventry(CV4 9GU), OTT = Otterbourne(SO21 2SW), S = Subcontracted, TRB = Subcontracted to Trowbridge(BA14 0XD), WAK = Wakefield(WF5 9TG).
For Microbiological determinands 0 or ND=Not Detected, For Legionella ND=Not Detected in volume of sample filtered. The LOD for the Legionella analysis will increase where the volume analysed is <1000g (1g is approximately equivalent to 1ml for sample volume analysed).
I/S=Insufficient sample For soil/sludge samples: AR=As received, DW=Dry weight.

Signed: P. Patel

Name: **P. Patel** Date: **19 December 2017**

Title: **Inorganic Team Leader**

ALS Environmental Ltd
Torrington Avenue, Coventry, CV4 9GU
Tel:+44 (0)24 7642 1213 Fax:+44 (0)24 7685 6575

Certificate of Analysis

ANALYSED BY

Report Number:	**COV/1474908/2017**	Issue	**1**
Laboratory Number:	**16645184**	Sample	**10** of **10**
Sample Source:	**ALS Life Sciences Limited**		
Sample Point Description:			
Sample Description:	**16671491 CBPU4_5-68**		
Sample Matrix:	**Not In Project**		
Sample Date/Time:	**24 November 2017**		
Sample Received:	**05 December 2017**		
Analysis Complete:	**07 December 2017**		

Test Description	Result	Units	Analysis Date	Accreditation	Method
Description of Sample	Analyst Com	Text	07/12/2017	N Cov	70
Asbestos Identification	Analyst Com	Text	07/12/2017	N Cov	70

Analyst Comments for 16645184: ASBESTOS COMMENTS Asbestos ID: Non Detected, Description of Sample: Soil

This issue replaces all previous issues
Accreditation Codes: Y = UKAS / ISO17025 Accredited, N = Not UKAS / ISO17025 Accredited, M = MCERTS.
Analysed at: CHE = Chester(CH4 9EP), CTD = Coatbridge(ML5 4FR), COV = Coventry(CV4 9GU), OTT = Otterbourne(SO21 2SW), S = Subcontracted, TRB = Subcontracted to Trowbridge(BA14 0XD), WAK = Wakefield(WF5 9TG).
For Microbiological determinands 0 or ND=Not Detected, For Legionella ND=Not Detected in volume of sample filtered. The LOD for the Legionella analysis will increase where the volume analysed is <1000g (1g is approximately equivalent to 1ml for sample volume analysed).
I/S=Insufficient sample For soil/sludge samples: AR=As received, DW=Dry weight.

Signed: P. Patel

Name: **P. Patel** Date: **19 December 2017**

Title: **Inorganic Team Leader**

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ANALYST COMMENTS FOR REPORT COV/1474908/2017

Issue 1 This issue replaces all previous issues

Date of Issue: **19 December 2017**

Sample No	Analysis Comments
16645175	ASBESTOS COMMENTS Asbestos ID: Non Detected, Description of Sample: Soil
16645176	ASBESTOS COMMENTS Asbestos ID: Chrysotile, Description of Sample: Fibres in Soil
16645177	ASBESTOS COMMENTS Asbestos ID: Non Detected, Description of Sample: Soil
16645178	ASBESTOS COMMENTS Asbestos ID: Non Detected, Description of Sample: Soil
16645179	ASBESTOS COMMENTS Asbestos ID: Non Detected, Description of Sample: Soil
16645180	ASBESTOS COMMENTS Asbestos ID: Non Detected, Description of Sample: Soil
16645181	ASBESTOS COMMENTS Asbestos ID: Chrysotile, Description of Sample: Fibres in Soil
16645182	ASBESTOS COMMENTS Asbestos ID: Non Detected, Description of Sample: Soil
16645183	ASBESTOS COMMENTS Asbestos ID: Chrysotile, Description of Sample: Fibres in Soil
16645184	ASBESTOS COMMENTS Asbestos ID: Non Detected, Description of Sample: Soil

Signed:

Name: **P. Patel** Date: **19 December 2017**

Title: **Inorganic Team Leader**

DETERMINAND COMMENTS FOR REPORT COV/1474908/2017

ISSUE 1

This issue replaces all previous issues

Date of Issue: 19 December 2017

Sample No	Description	Determinand	Comments
16645175	16671667 CBPU4_5-33	Asbestos Identification	{/*}Non Detected{*/}
16645175	16671667 CBPU4_5-33	Description of Sample	{/*}Soil{*/}
16645176	16671652 CBPU4_5-52	Asbestos Identification	{/*}Chrysotile{*/}
16645176	16671652 CBPU4_5-52	Description of Sample	{/*}Fibres in Soil{*/}
16645177	16671453 CBPU4_5-54	Asbestos Identification	{/*}Non Detected{*/}
16645177	16671453 CBPU4_5-54	Description of Sample	{/*}Soil{*/}
16645178	16671664 CBPU4_5-56	Asbestos Identification	{/*}Non Detected{*/}
16645178	16671664 CBPU4_5-56	Description of Sample	{/*}Soil{*/}
16645179	16671670 CBPU4_5-58	Asbestos Identification	{/*}Non Detected{*/}
16645179	16671670 CBPU4_5-58	Description of Sample	{/*}Soil{*/}
16645180	16671489 CBPU4_5-60	Asbestos Identification	{/*}Non Detected{*/}
16645180	16671489 CBPU4_5-60	Description of Sample	{/*}Soil{*/}
16645181	16671502 CBPU4_5-62	Asbestos Identification	{/*}Chrysotile{*/}
16645181	16671502 CBPU4_5-62	Description of Sample	{/*}Fibres in Soil{*/}
16645182	16671520 CBPU4_5-64	Asbestos Identification	{/*}Non Detected{*/}
16645182	16671520 CBPU4_5-64	Description of Sample	{/*}Soil{*/}
16645183	16671538 CBPU4_5-66	Asbestos Identification	{/*}Chrysotile{*/}
16645183	16671538 CBPU4_5-66	Description of Sample	{/*}Fibres in Soil{*/}
16645184	16671491 CBPU4_5-68	Asbestos Identification	{/*}Non Detected{*/}
16645184	16671491 CBPU4_5-68	Description of Sample	{/*}Soil{*/}

Signed:

Name: **P. Patel** Date: **19 December 2017**

Title: **Inorganic Team Leader**

Appendix

General

1. Results are expressed on a dry weight basis (dried at 35ºC) for all soil analyses except for the following: NRA and CEN Leach tests, flash point LOI, pH, ammonium as NH4 by the BRE method, VOC TICs and SVOC TICs.

2. Samples will be run in duplicate upon request, but an additional charge may be incurred.

3. If sufficient sample is received a sub sample will be retained free of charge for 30 days after analysis is completed (e-mailed) for all sample types unless the sample is destroyed on testing. The prepared soil sub sample that is analysed for asbestos will be retained for a period of 6 months after the analysis date. All bulk samples will be retained for a period of 6 months after the analysis date. All samples received and not scheduled will be disposed of one month after the date of receipt unless we are instructed to the contrary. Once the initial period has expired, a storage charge will be applied for each month or part thereof until the client cancels the request for sample storage. ALS reserve the right to charge for samples received and stored but not analysed.

4. With respect to turnaround, we will always endeavour to meet client requirements wherever possible, but turnaround times cannot be absolutely guaranteed due to so many variables beyond our control.

5. We take responsibility for any test performed by sub-contractors (marked with an asterisk). We endeavour to use UKAS/MCERTS Accredited Laboratories, who either complete a quality questionnaire or are audited by ourselves. For some determinands there are no UKAS/MCERTS Accredited Laboratories, in this instance a laboratory with a known track record will be utilised.

6. When requested, the individual sub sample scheduled will be analysed in house for the presence of asbestos fibres and asbestos containing material by our documented in house method TM048 based on HSG 248 (2005), which is accredited to ISO17025. If a specific asbestos fibre type is not found this will be reported as “Not detected”. If no asbestos fibre types are found all will be reported as “Not detected” and the sub sample analysed deemed to be clear of asbestos. If an asbestos fibre type is found it will be reported as detected (for each fibre type found). Testing can be carried out on asbestos positive samples, but, due to Health and Safety considerations, may be replaced by alternative tests or reported as No Determination Possible (NDP). The quantity of asbestos present is not determined unless specifically requested.

7. If no separate volatile sample is supplied by the client, or if a headspace or sediment is present in the volatile sample, the integrity of the data may be compromised. This will be flagged up as an invalid VOC on the test schedule and the result marked as deviating on the test certificate.

8. If appropriate preserved bottles are not received preservation will take place on receipt. However, the integrity of the data may be compromised.

9. NDP - No determination possible due to insufficient/unsuitable sample.

10. Metals in water are performed on a filtered sample, and therefore represent dissolved metals - total metals must be requested separately.

11. Results relate only to the items tested.

12. LoDs (Limit of Detection) for wet tests reported on a dry weight basis are not corrected for moisture content.

13. **Surrogate recoveries** - Surrogates are added to your sample to monitor recovery of the test requested. A % recovery is reported, results are not corrected for the recovery measured. Typical recoveries for organics tests are 70-130%, they are generally wider for volatiles analysis, 50-150%. Recoveries in soils are affected by organic rich or clay rich matrices. Waters can be affected by remediation fluids or high amounts of sediment. Test results are only ever reported if all of the associated quality checks pass; it is assumed that all recoveries outside of the values above are due to matrix affect.

14. **Product analyses** - Organic analyses on products can only be semi-quantitative due to the matrix effects and high dilution factors employed.

15. Phenols monohydric by HPLC include phenol, cresols (2-Methylphenol, 3-Methylphenol and 4-Methylphenol) and Xylenols (2,3 Dimethylphenol, 2,4 Dimethylphenol, 2,5 Dimethylphenol, 2,6 Dimethylphenol, 3,4 Dimethyphenol, 3,5 Dimethylphenol).

16. Total of 5 speciated phenols by HPLC includes Phenol, 2,3,5-Trimethyl Phenol, 2-Isopropylphenol, Cresols and Xylenols (as detailed in 15).

17. Stones/debris are not routinely removed. We always endeavour to take a representative sub sample from the received sample.

18. In certain circumstances the method detection limit may be elevated due to the sample being outside the calibration range. Other factors that may contribute to this include possible interferences. In both cases the sample would be diluted which would cause the method detection limit to be raised.

19. Mercury results quoted on soils will not include volatile mercury as the analysis is performed on a dried and crushed sample.

20. For leachate preparations other than Zero Headspace Extraction (ZHE) volatile loss may occur.

21. For the BSEN 12457-3 two batch process to allow the cumulative release to be calculated, the volume of the leachate produced is measured and filtered for all tests. We therefore cannot carry out any unfiltered analysis. The tests affected include volatiles GCFID/GCMS and all subcontracted analysis.

22. We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample. Other coarse granular material such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

23. Analysis and identification of specific compounds using GCFID is by retention time only, and we routinely calibrate and quantify for benzene, toluene, ethylbenzenes and xylenes (BTEX). For total volatiles in the C5-C12 range, the total area of the chromatogram is integrated and expressed as ug/kg or ug/l. Although this analysis is commonly used for the quantification of gasoline range organics (GRO), the system will also detect other compounds such as chlorinated solvents, and this may lead to a falsely high result with respect to hydrocarbons only. It is not possible to specifically identify these non-hydrocarbons, as standards are not routinely run for any other compounds, and for more definitive identification, volatiles by GCMS should be utilised.

24. **Tentatively Identified Compounds (TICs)** are non-target peaks in VOC and SVOC analysis. All non-target peaks detected with a concentration above the LoD are subjected to a mass spectral library search. Non-target peaks with a library search confidence of >75% are reported based on the best mass spectral library match. When a non-target peak with a library search confidence of <75% is detected it is reported as “mixed hydrocarbons”. Non-target compounds identified from the scan data are semi-quantified relative to one of the deuterated internal standards, under the same chromatographic conditions as the target compounds. This result is reported as a semi-quantitative value and reported as Tentatively Identified Compounds (TICs). TICs are outside the scope of UKAS accreditation and are not moisture corrected.

Sample Deviations

If a sample is classed as deviated then the associated results may be compromised.

1	**Container with Headspace provided for volatiles analysis**
2	**Incorrect container received**
3	**Deviation from method**
4	**Holding time exceeded before sample received**
5	**Samples exceeded holding time before presevation was performed**
§	**Sampled on date not provided**
♦	**Sample holding time exceeded in laboratory**
@	**Sample holding time exceeded due to sampled on date**
&	**Sample Holding Time exceeded - Late arrival of instructions.**

Asbestos

Identification of Asbestos in Bulk Materials & Soils

The results for identification of asbestos in bulk materials are obtained from supplied bulk materials which have been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

The results for identification of asbestos in soils are obtained from a homogenised sub sample which has been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

Asbestos Type	Common Name
Chrysotile	White Asbestos
Amosite	Brown Asbestos
Crocidolite	Blue Asbestos
Fibrous Actinolite	-
Fibrous Anthophyllite	-
Fibrous Tremolite	-

Visual Estimation Of Fibre Content

Estimation of fibre content is not permitted as part of our UKAS accredited test other than: - Trace - Where only one or two asbestos fibres were identified.

Further guidance on typical asbestos fibre content of manufactured products can be found in HSG 264.

The identification of asbestos containing materials and soils falls within our schedule of tests for which we hold UKAS accreditation, however opinions, interpretations and all other information contained in the report are outside the scope of UKAS accreditation.

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Website: www.alsenvironmental.co.uk

Atkins Global Ltd
Project Jonah site office
Llan Coed House
Suite 24
Coed Darcy
Llandarcy
SA10 6HJ

Attention: John Fitzgerald

CERTIFICATE OF ANALYSIS

Date:	15 March 2018
Customer:	H_ATKINS_LDC
Sample Delivery Group (SDG):	180118-49
Your Reference:	
Location:	Llanwern
Report No:	448302

This report has been revised and directly supersedes 442943 in its entirety.

We received 27 samples on Thursday January 18, 2018 and 27 of these samples were scheduled for analysis which was completed on Thursday March 15, 2018. Accredited laboratory tests are defined within the report, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation.

Should this report require incorporation into client reports, it must be used in its entirety and not simply with the data sections alone.

Chemical testing (unless subcontracted) performed at ALS Environmental Hawarden (Method codes TM) or ALS Environmental Aberdeen (Method codes S).

Approved By:

Sonia McWhan

Operations Manager

ALS Life Sciences Limited. Registered Office: Units 7 & 8 Hawarden Business Park, Manor Road, Hawarden, Deeside, CH5 3US. Registered in England and Wales No. 4057291.

CERTIFICATE OF ANALYSIS

SDG:	180118-49	**Client Reference:**		**Report Number:**	448302
Location:	Llanwern	**Order Number:**	LLA388	**Superseded Report:**	442943

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
16889538	W83-01		0.00 - 0.00	17/01/2018
16889542	W83-02		0.00 - 0.00	17/01/2018
16889548	W83-03		0.00 - 0.00	17/01/2018
16889554	W83-04		0.00 - 0.00	17/01/2018
16889559	W83-05		0.00 - 0.00	17/01/2018
16889564	W83-06		0.00 - 0.00	17/01/2018
16889568	W83-07		0.00 - 0.00	17/01/2018
16889572	W83-08		0.00 - 0.00	17/01/2018
16889576	W83-09		0.00 - 0.00	17/01/2018
16889531	W84-01		0.00 - 0.00	17/01/2018
16889585	W84-02		0.00 - 0.00	17/01/2018
16889637	W84-03		0.00 - 0.00	17/01/2018
16889643	W84-04		0.00 - 0.00	17/01/2018
16889648	W84-05		0.00 - 0.00	17/01/2018
16889652	W84-06		0.00 - 0.00	17/01/2018
16889656	W84-07		0.00 - 0.00	17/01/2018
16889665	W84-08		0.00 - 0.00	17/01/2018
16889669	W84-09		0.00 - 0.00	17/01/2018
16889580	W134-01		0.00 - 0.00	17/01/2018
16889590	W134-02		0.00 - 0.00	17/01/2018
16889597	W134-03		0.00 - 0.00	17/01/2018
16889602	W134-04		0.00 - 0.00	17/01/2018
16889610	W134-05		0.00 - 0.00	17/01/2018
16889615	W134-06		0.00 - 0.00	17/01/2018
16889621	W134-07		0.00 - 0.00	17/01/2018
16889626	W134-08		0.00 - 0.00	17/01/2018
16889631	W134-09		0.00 - 0.00	17/01/2018

Maximum Sample/Coolbox Temperature (°C) :

ISO5667-3 Water quality - Sampling - Part3 -

During Transportation samples shall be stored in a cooling device capable of maintaining a temperature of (5±3)°C.

6.4

ALS have data which show that a cool box with 4 frozen icepacks is capable of maintaining pre-chilled samples at a temperature of (5±3)°C for a period of up to 24hrs.

Only received samples which have had analysis scheduled will be shown on the following pages.

Validated

CERTIFICATE OF ANALYSIS

SDG:	180118-49	**Client Reference:**		**Report Number:**	448302
Location:	Llanwern	**Order Number:**	LLA388	**Superseded Report:**	442943

Results Legend

X Test

N No Determination Possible

Sample Types -
S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

			Lab Sample No(s)																			
			16889538			16889542			16889548			16889554			16889559			16889564			16889568	
			Customer Sample Reference																			
			W83-01			W83-02			W83-03			W83-04			W83-05			W83-06			W83-07	
			AGS Reference																			
			Depth (m)																			
			0.00 - 0.00			0.00 - 0.00			0.00 - 0.00			0.00 - 0.00			0.00 - 0.00			0.00 - 0.00			0.00 - 0.00	
			Container																			
			1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	
			Sample Type																			
			S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
Alkali Metals by iCap-OES (Soil)	All	NDPs: 0 Tests: 15		X						X						X						
Ammoniacal Nitrogen	All	NDPs: 0 Tests: 27	X			X			X			X			X			X			X	
Ammonium Soil by Titration	All	NDPs: 0 Tests: 27		X			X			X			X			X			X				
Anions by Kone (soil)	All	NDPs: 0 Tests: 15		X						X						X						
Asbestos ID in Solid Samples	All	NDPs: 0 Tests: 15	X						X						X						X	
Asbestos Quantification - Full	All	NDPs: 0 Tests: 10	X						X												X	
CEN Readings	All	NDPs: 0 Tests: 27	X			X			X			X			X			X			X	
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 54	X	X		X	X		X	X		X	X		X	X		X	X		X	
Dissolved Metals by ICP-MS	All	NDPs: 0 Tests: 27	X			X			X			X			X			X			X	
EPH CWG (Aliphatic) Filtered GC (W)	All	NDPs: 0 Tests: 27	X			X			X			X			X			X			X	
EPH CWG (Aliphatic) GC (S)	All	NDPs: 0 Tests: 27		X			X			X			X			X			X				
EPH CWG (Aromatic) Filtered GC (W)	All	NDPs: 0 Tests: 27	X			X			X			X			X			X			X	
EPH CWG (Aromatic) GC (S)	All	NDPs: 0 Tests: 27		X			X			X			X			X			X				
GRO by GC-FID (S)	All	NDPs: 0 Tests: 27			X			X			X			X			X			X		
GRO by GC-FID (W)	All	NDPs: 0 Tests: 27	X			X			X			X			X			X			X	

16889648	W84-05		0.00 - 0.00	1kg TUB	S			x			x		x		x		x		x		x				x
16889643	W84-04		0.00 - 0.00	60g VOC (ALE215)	S																			x	
				250g Amber Jar (ALE210)	S				x						x				x				x			
				1kg TUB	S			x						x		x		x			x				x
16889637	W84-03		0.00 - 0.00	60g VOC (ALE215)	S																			x	
				250g Amber Jar (ALE210)	S	x			x	x					x				x				x			
				1kg TUB	S			x			x		x		x		x		x		x				x
16889585	W84-02		0.00 - 0.00	60g VOC (ALE215)	S																			x	
				250g Amber Jar (ALE210)	S				x						x				x				x			
				1kg TUB	S			x						x		x		x			x				x
16889531	W84-01		0.00 - 0.00	60g VOC (ALE215)	S																			x	
				250g Amber Jar (ALE210)	S	x			x	x					x				x				x			
				1kg TUB	S			x			x		x		x		x		x		x				x
16889576	W83-09		0.00 - 0.00	60g VOC (ALE215)	S																			x	
				250g Amber Jar (ALE210)	S	x			x	x					x				x				x			
				1kg TUB	S			x			x		x		x		x		x		x				x
16889572	W83-08		0.00 - 0.00	60g VOC (ALE215)	S																			x	
				250g Amber Jar (ALE210)	S				x						x				x				x			
				1kg TUB	S			x						x		x		x			x				x
16889568	W83-07		0.00 - 0.00	60g VOC (ALE215)	S																			x	
				250g Amber Jar (ALE210)	S	x			x	x					x				x				x			

Validated

CERTIFICATE OF ANALYSIS

SDG:	180118-49	**Client Reference:**		**Report Number:**	448302
Location:	Llanwern	**Order Number:**	LLA388	**Superseded Report:**	442943

Results Legend

X Test

N No Determination Possible

Sample Types -

S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

Lab Sample No(s)				16889538			16889542			16889548			16889554			16889559			16889564			16889568		
Customer Sample Reference				W83-01			W83-02			W83-03			W83-04			W83-05			W83-06			W83-07		
AGS Reference																								
Depth (m)				0.00 - 0.00			0.00 - 0.00			0.00 - 0.00			0.00 - 0.00			0.00 - 0.00			0.00 - 0.00			0.00 - 0.00		
Container				1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB		
Sample Type				S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S		
Mercury Dissolved	All	NDPs: 0 Tests: 27		X			X			X			X			X			X			X		
Metals by iCap-OES Dissolved (W)	All	NDPs: 0 Tests: 27		X			X			X			X			X			X			X		
Metals in solid samples by OES	All	NDPs: 0 Tests: 27			X			X			X			X			X			X				
PAH by GCMS	All	NDPs: 0 Tests: 27			X			X			X			X			X			X				
PAH in waters by GC-MS (diss.filt)	All	NDPs: 0 Tests: 27		X			X			X			X			X			X			X		
pH	All	NDPs: 0 Tests: 27			X			X			X			X			X			X				
pH Value of Filtered Water	All	NDPs: 0 Tests: 27		X			X			X			X			X			X			X		
Phenols by HPLC (S)	All	NDPs: 0 Tests: 27			X			X			X			X			X			X				
Sample description	All	NDPs: 0 Tests: 26			X			X			X			X			X			X				
Total Organic Carbon	All	NDPs: 0 Tests: 27			X			X			X			X			X			X				
Total Sulphate	All	NDPs: 0 Tests: 15			X						X						X							
Total Sulphur	All	NDPs: 0 Tests: 15			X						X						X							
TPH CWG Filtered (W)	All	NDPs: 0 Tests: 27		X			X			X			X			X			X			X		
TPH CWG GC (S)	All	NDPs: 0 Tests: 27			X			X			X			X			X			X				
VOC MS (W)	All	NDPs: 0 Tests: 27		X			X			X			X			X			X			X		

16889648	W84-05		0.00 - 0.00	1kg TUB	S		x		x				x		x								x		x
16889643	W84-04		0.00 - 0.00	60g VOC (ALE215)	S																				
				250g Amber Jar (ALE210)	S					x		x		x				x		x		x				x	
				1kg TUB	S		x		x				x		x								x		x
16889637	W84-03		0.00 - 0.00	60g VOC (ALE215)	S																				
				250g Amber Jar (ALE210)	S					x		x		x		x		x		x		x				x	
				1kg TUB	S		x		x				x		x								x		x
16889585	W84-02		0.00 - 0.00	60g VOC (ALE215)	S																				
				250g Amber Jar (ALE210)	S					x		x		x		x		x		x						x	
				1kg TUB	S		x		x				x		x								x		x
16889531	W84-01		0.00 - 0.00	60g VOC (ALE215)	S																				
				250g Amber Jar (ALE210)	S					x		x		x		x		x		x		x				x	
				1kg TUB	S		x		x				x		x								x		x
16889576	W83-09		0.00 - 0.00	60g VOC (ALE215)	S																				
				250g Amber Jar (ALE210)	S					x		x		x		x		x		x		x				x	
				1kg TUB	S		x		x				x		x								x		x
16889572	W83-08		0.00 - 0.00	60g VOC (ALE215)	S																				
				250g Amber Jar (ALE210)	S					x		x		x		x		x		x						x	
				1kg TUB	S		x		x				x		x								x		x
16889568	W83-07		0.00 - 0.00	60g VOC (ALE215)	S																				
				250g Amber Jar (ALE210)	S					x		x		x			x		x		x		x				

Validated

CERTIFICATE OF ANALYSIS

SDG:	180118-49	**Client Reference:**		**Report Number:**	448302
Location:	Llanwern	**Order Number:**	LLA388	**Superseded Report:**	442943

Results Legend

X Test

N No Determination Possible

Sample Types -

S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

Lab Sample No(s)			16889648		16889652			16889656			16889665			16889669			16889580		16889590	
Customer Sample Reference			W84-05		W84-06			W84-07			W84-08			W84-09			W134-01		W134-02	
AGS Reference																				
Depth (m)			0.00 - 0.00		0.00 - 0.00			0.00 - 0.00			0.00 - 0.00			0.00 - 0.00			0.00 - 0.00		0.00 - 0.00	
Container			250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)
Sample Type			S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
Alkali Metals by iCap-OES (Soil)	All	NDPs: 0 Tests: 15	X						X					X			X			
Ammoniacal Nitrogen	All	NDPs: 0 Tests: 27			X			X			X			X			X		X	
Ammonium Soil by Titration	All	NDPs: 0 Tests: 27	X			X			X			X			X			X			X
Anions by Kone (soil)	All	NDPs: 0 Tests: 15	X						X					X			X			
Asbestos ID in Solid Samples	All	NDPs: 0 Tests: 15						X						X			X			
Asbestos Quantification - Full	All	NDPs: 0 Tests: 10						X												
Calorific Value (S)*	All	NDPs: 0 Tests: 9															X			X
CEN Readings	All	NDPs: 0 Tests: 27			X			X			X			X			X		X	
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 54	X		X	X		X	X		X	X		X	X		X	X	X	X
Dissolved Metals by ICP-MS	All	NDPs: 0 Tests: 27			X			X			X			X			X		X	
EPH CWG (Aliphatic) Filtered GC (W)	All	NDPs: 0 Tests: 27			X			X			X			X			X		X	
EPH CWG (Aliphatic) GC (S)	All	NDPs: 0 Tests: 27	X			X			X			X			X			X			X
EPH CWG (Aromatic) Filtered GC (W)	All	NDPs: 0 Tests: 27			X			X			X			X			X		X	
EPH CWG (Aromatic) GC (S)	All	NDPs: 0 Tests: 27	X			X			X			X			X			X			X
GRO by GC-FID (S)	All	NDPs: 0 Tests: 27		X			X			X			X			X			X		

16889631	W134-09		0.00 - 0.00	250g Amber Jar (ALE210)	S	X		X	X			X		X			X		X	
				1kg TUB	S		X			X			X	X	X	X		X		
16889626	W134-08		0.00 - 0.00	60g VOC (ALE215)	S															X
				250g Amber Jar (ALE210)	S			X				X		X			X		X	
				1kg TUB	S		X						X	X	X	X		X		
16889621	W134-07		0.00 - 0.00	60g VOC (ALE215)	S															X
				250g Amber Jar (ALE210)	S	X		X	X			X		X			X		X	
				1kg TUB	S		X			X	X		X	X	X	X		X		
16889615	W134-06		0.00 - 0.00	60g VOC (ALE215)	S															X
				250g Amber Jar (ALE210)	S			X				X		X			X		X	
				1kg TUB	S		X						X	X	X	X		X		
16889610	W134-05		0.00 - 0.00	60g VOC (ALE215)	S															X
				250g Amber Jar (ALE210)	S	X		X	X			X		X			X		X	
				1kg TUB	S		X			X	X		X	X	X	X		X		
16889602	W134-04		0.00 - 0.00	60g VOC (ALE215)	S															X
				250g Amber Jar (ALE210)	S			X				X		X			X		X	
				1kg TUB	S		X						X	X	X	X		X		
16889597	W134-03		0.00 - 0.00	60g VOC (ALE215)	S															X
				250g Amber Jar (ALE210)	S	X		X	X			X		X			X		X	
				1kg TUB	S		X			X			X	X	X	X		X		
16889590	W134-02		0.00 - 0.00	60g VOC (ALE215)	S															X

Validated

CERTIFICATE OF ANALYSIS

SDG: 180118-49 **Client Reference:** **Report Number:** 448302
Location: Llanwern **Order Number:** LLA388 **Superseded Report:** 442943

Results Legend

X Test

N No Determination Possible

Sample Types -
S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

			Lab Sample No(s)	Customer Sample Reference	AGS Reference	Depth (m)	Container	Sample Type
GRO by GC-FID (W)	All	NDPs: 0 Tests: 27	16889648	W84-05		0.00 - 0.00	250g Amber Jar (ALE210)	S
							60g VOC (ALE215)	S
			X				1kg TUB	S
							250g Amber Jar (ALE210)	S
							60g VOC (ALE215)	S
			X				1kg TUB	S
							250g Amber Jar (ALE210)	S
							60g VOC (ALE215)	S
			X				1kg TUB	S
							250g Amber Jar (ALE210)	S
							60g VOC (ALE215)	S
			X				1kg TUB	S
							250g Amber Jar (ALE210)	S
							60g VOC (ALE215)	S
			X				1kg TUB	S
							250g Amber Jar (ALE210)	S
							60g VOC (ALE215)	S
			X				1kg TUB	S
							250g Amber Jar (ALE210)	S
							60g VOC (ALE215)	S
			X				1kg TUB	S
							250g Amber Jar (ALE210)	S
Mercury Dissolved	All	NDPs: 0 Tests: 27	16889652	W84-06		0.00 - 0.00	250g Amber Jar (ALE210)	S
							60g VOC (ALE215)	S
			X				1kg TUB	S
							250g Amber Jar (ALE210)	S
							60g VOC (ALE215)	S
			X				1kg TUB	S
							250g Amber Jar (ALE210)	S
							60g VOC (ALE215)	S
			X				1kg TUB	S
							250g Amber Jar (ALE210)	S
							60g VOC (ALE215)	S
			X				1kg TUB	S
							250g Amber Jar (ALE210)	S
							60g VOC (ALE215)	S
			X				1kg TUB	S
							250g Amber Jar (ALE210)	S
Metals by iCap-OES Dissolved (W)	All	NDPs: 0 Tests: 27	16889656	W84-07		0.00 - 0.00	250g Amber Jar (ALE210)	S
							60g VOC (ALE215)	S
			X				1kg TUB	S
							250g Amber Jar (ALE210)	S
							60g VOC (ALE215)	S
			X				1kg TUB	S
							250g Amber Jar (ALE210)	S
							60g VOC (ALE215)	S
			X				1kg TUB	S
							250g Amber Jar (ALE210)	S
							60g VOC (ALE215)	S
			X				1kg TUB	S
							250g Amber Jar (ALE210)	S
Metals in solid samples by OES	All	NDPs: 0 Tests: 27	16889665	W84-08		0.00 - 0.00	250g Amber Jar (ALE210)	S
							60g VOC (ALE215)	S
			X				1kg TUB	S
							250g Amber Jar (ALE210)	S
							60g VOC (ALE215)	S
			X				1kg TUB	S
							250g Amber Jar (ALE210)	S
							60g VOC (ALE215)	S
			X				1kg TUB	S
							250g Amber Jar (ALE210)	S
							60g VOC (ALE215)	S
			X				1kg TUB	S
							250g Amber Jar (ALE210)	S
PAH by GCMS	All	NDPs: 0 Tests: 27	16889669	W84-09		0.00 - 0.00	250g Amber Jar (ALE210)	S
							60g VOC (ALE215)	S
			X				1kg TUB	S
							250g Amber Jar (ALE210)	S
							60g VOC (ALE215)	S
			X				1kg TUB	S
							250g Amber Jar (ALE210)	S
							60g VOC (ALE215)	S
			X				1kg TUB	S
							250g Amber Jar (ALE210)	S
							60g VOC (ALE215)	S
			X				1kg TUB	S
							250g Amber Jar (ALE210)	S
PAH in waters by GC-MS (diss.filt)	All	NDPs: 0 Tests: 27	16889580	W134-01		0.00 - 0.00	250g Amber Jar (ALE210)	S
							60g VOC (ALE215)	S
			X				1kg TUB	S
							250g Amber Jar (ALE210)	S
							60g VOC (ALE215)	S
			X				1kg TUB	S
							250g Amber Jar (ALE210)	S
							60g VOC (ALE215)	S
			X				1kg TUB	S
							250g Amber Jar (ALE210)	S
							60g VOC (ALE215)	S
			X				1kg TUB	S
							250g Amber Jar (ALE210)	S
pH	All	NDPs: 0 Tests: 27	16889590	W134-02		0.00 - 0.00	250g Amber Jar (ALE210)	S
							60g VOC (ALE215)	S
			X				1kg TUB	S
							250g Amber Jar (ALE210)	S
							60g VOC (ALE215)	S
			X				1kg TUB	S
							250g Amber Jar (ALE210)	S
							60g VOC (ALE215)	S
			X				1kg TUB	S
							250g Amber Jar (ALE210)	S
							60g VOC (ALE215)	S
			X				1kg TUB	S
							250g Amber Jar (ALE210)	S
pH Value of Filtered Water	All	NDPs: 0 Tests: 27						
			X					
			X					
			X					
Phenols by HPLC (S)	All	NDPs: 0 Tests: 27						
			X					
			X					
			X					
Sample description	All	NDPs: 0 Tests: 26						
			X					
			X					
			X					
Total Organic Carbon	All	NDPs: 0 Tests: 27						
			X					
			X					
			X					
Total Sulphate	All	NDPs: 0 Tests: 15						
			X					
			X					
			X					
Total Sulphur	All	NDPs: 0 Tests: 15						
			X					
			X					
			X					
TPH CWG Filtered (W)	All	NDPs: 0 Tests: 27						
			X					
			X					
			X					
TPH CWG GC (S)	All	NDPs: 0 Tests: 27						
			X					
			X					
			X					

16889631	W134-09		0.00 - 0.00	250g Amber Jar (ALE210)	S				x	x		x		x	x	x	x	x		x
				1kg TUB	S	x	x	x			x		x						x	
16889626	W134-08		0.00 - 0.00	60g VOC (ALE215)	S															
				250g Amber Jar (ALE210)	S				x	x		x		x	x	x				x
				1kg TUB	S	x	x	x			x		x						x	
16889621	W134-07		0.00 - 0.00	60g VOC (ALE215)	S															
				250g Amber Jar (ALE210)	S				x	x		x		x	x	x	x	x		x
				1kg TUB	S	x	x	x			x		x						x	
16889615	W134-06		0.00 - 0.00	60g VOC (ALE215)	S															
				250g Amber Jar (ALE210)	S				x	x		x		x	x	x				x
				1kg TUB	S	x	x	x			x		x						x	
16889610	W134-05		0.00 - 0.00	60g VOC (ALE215)	S															
				250g Amber Jar (ALE210)	S				x	x		x		x	x	x	x	x		x
				1kg TUB	S	x	x	x			x		x						x	
16889602	W134-04		0.00 - 0.00	60g VOC (ALE215)	S															
				250g Amber Jar (ALE210)	S				x	x		x		x	x	x				x
				1kg TUB	S	x	x	x			x		x						x	
16889597	W134-03		0.00 - 0.00	60g VOC (ALE215)	S															
				250g Amber Jar (ALE210)	S				x	x		x		x	x	x	x	x		x
				1kg TUB	S	x	x	x			x		x						x	
16889590	W134-02		0.00 - 0.00	60g VOC (ALE215)	S															

Validated

CERTIFICATE OF ANALYSIS

SDG:	180118-49	**Client Reference:**		**Report Number:**	448302
Location:	Llanwern	**Order Number:**	LLA388	**Superseded Report:**	442943

Results Legend

X **Test**

N **No Determination Possible**

Sample Types -

S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

Lab Sample No(s)	16889648		16889652			16889656			16889665			16889669			16889580			16889590							
Customer Sample Reference	W84-05		W84-06			W84-07			W84-08			W84-09			W134-01			W134-02							
AGS Reference																									
Depth (m)	0.00 - 0.00		0.00 - 0.00			0.00 - 0.00			0.00 - 0.00			0.00 - 0.00			0.00 - 0.00			0.00 - 0.00							
Container	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)							
Sample Type	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S							
VOC MS (W)	All	NDPs: 0 Tests: 27																								
			X			X			X			X			X			X							

16889631	W134-09		0.00 - 0.00	250g Amber Jar (ALE210)	S		
				1kg TUB	S		X
16889626	W134-08		0.00 - 0.00	60g VOC (ALE215)	S		
				250g Amber Jar (ALE210)	S		
				1kg TUB	S		X
16889621	W134-07		0.00 - 0.00	60g VOC (ALE215)	S		
				250g Amber Jar (ALE210)	S		
				1kg TUB	S		X
16889615	W134-06		0.00 - 0.00	60g VOC (ALE215)	S		
				250g Amber Jar (ALE210)	S		
				1kg TUB	S		X
16889610	W134-05		0.00 - 0.00	60g VOC (ALE215)	S		
				250g Amber Jar (ALE210)	S		
				1kg TUB	S		X
16889602	W134-04		0.00 - 0.00	60g VOC (ALE215)	S		
				250g Amber Jar (ALE210)	S		
				1kg TUB	S		X
16889597	W134-03		0.00 - 0.00	60g VOC (ALE215)	S		
				250g Amber Jar (ALE210)	S		
				1kg TUB	S		X
16889590	W134-02		0.00 - 0.00	60g VOC (ALE215)	S		

CERTIFICATE OF ANALYSIS

SDG:	180118-49	**Client Reference:**		**Report Number:**	448302
Location:	Llanwern	**Order Number:**	LLA388	**Superseded Report:**	442943

Results Legend

X **Test**

N **No Determination Possible**

Sample Types -

S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

Lab Sample No(s)			16889631
Customer Sample Reference			W134-09
AGS Reference			
Depth (m)			0.00 - 0.00
Container			60g VOC (ALE215)
Sample Type			S
GRO by GC-FID (S)	All	NDPs: 0 Tests: 27	X

CERTIFICATE OF ANALYSIS

SDG:	180118-49	**Client Reference:**		**Report Number:**	448302
Location:	Llanwern	**Order Number:**	LLA388	**Superseded Report:**	442943

Sample Descriptions

Grain Sizes

very fine	<0.063mm	fine	0.063mm - 0.1mm	medium	0.1mm - 2mm	coarse	2mm - 10mm	very coarse	>10mm

Lab Sample No(s)	Customer Sample Ref.	Depth (m)	Colour	Description	Inclusions	Inclusions 2
16889538	W83-01	0.00 - 0.00	Dark Brown	Sandy Loam	Stones	Brick
16889542	W83-02	0.00 - 0.00	Dark Brown	Loamy Sand	Stones	None
16889548	W83-03	0.00 - 0.00	Dark Brown	Loamy Sand	Stones	Vegetation
16889554	W83-04	0.00 - 0.00	Dark Brown	Loamy Sand	Stones	None
16889559	W83-05	0.00 - 0.00	Dark Brown	Loamy Sand	Stones	Brick
16889564	W83-06	0.00 - 0.00	Dark Brown	Loamy Sand	Stones	None
16889568	W83-07	0.00 - 0.00	Dark Brown	Loamy Sand	Stones	N/A
16889572	W83-08	0.00 - 0.00	Dark Brown	Loamy Sand	Stones	Vegetation
16889576	W83-09	0.00 - 0.00	Dark Brown	Loamy Sand	Stones	None
16889531	W84-01	0.00 - 0.00	Dark Brown	Loamy Sand	Stones	Vegetation
16889585	W84-02	0.00 - 0.00	Dark Brown	Sandy Loam	Stones	Crushed Brick
16889637	W84-03	0.00 - 0.00	Dark Brown	Sandy Loam	Stones	None
16889643	W84-04	0.00 - 0.00	Dark Brown	Sandy Loam	Stones	None
16889648	W84-05	0.00 - 0.00	Dark Brown	Sandy Loam	Stones	Vegetation
16889652	W84-06	0.00 - 0.00	Dark Brown	Sandy Loam	Stones	None
16889656	W84-07	0.00 - 0.00	Dark Brown	Loamy Sand	Stones	Brick
16889665	W84-08	0.00 - 0.00	Dark Brown	Sandy Loam	Stones	None
16889669	W84-09	0.00 - 0.00	Dark Brown	Loamy Sand	Stones	None
16889580	W134-01	0.00 - 0.00	Dark Brown	Loamy Sand	Stones	None
16889590	W134-02	0.00 - 0.00	Dark Brown	Loamy Sand	Stones	None
16889597	W134-03	0.00 - 0.00	Dark Brown	Loamy Sand	Stones	None
16889602	W134-04	0.00 - 0.00	Dark Brown	Loamy Sand	Stones	None
16889610	W134-05	0.00 - 0.00	Dark Brown	Loamy Sand	Stones	None
16889615	W134-06	0.00 - 0.00	Dark Brown	Loamy Sand	Stones	None
16889621	W134-07	0.00 - 0.00	Dark Brown	Loamy Sand	Stones	None
16889626	W134-08	0.00 - 0.00	Dark Brown	Loamy Sand	Stones	None
16889631	W134-09	0.00 - 0.00	Dark Brown	Loamy Sand	Stones	None

These descriptions are only intended to act as a cross check if sample identities are questioned, and to provide a log of sample matrices with respect to MCERTS validation. They are not intended as full geological descriptions.

We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally ocurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample.

Other coarse granular materials such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

CERTIFICATE OF ANALYSIS

SDG:	180118-49	**Client Reference:**		**Report Number:**	448302
Location:	Llanwern	**Order Number:**	LLA388	**Superseded Report:**	442943

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	W83-01	W83-02	W83-03	W83-04	W83-05	W83-06
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	17/01/2018	17/01/2018	17/01/2018	17/01/2018	17/01/2018	17/01/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	18/01/2018	18/01/2018	18/01/2018	18/01/2018	18/01/2018	18/01/2018
			SDG Ref	180118-49	180118-49	180118-49	180118-49	180118-49	180118-49
			Lab Sample No.(s)	16889538	16889542	16889548	16889554	16889559	16889564
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		13	13	13	14	12	10
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	<12 M	<12 M	<12 M	<12 M	<12 M
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M
Sulphur, Total	<0.02 %	TM132		0.303		0.263		0.247	
Sulphate, Total potential	<0.06 %	TM132		0.909		0.789		0.741	
Soil Organic Matter (SOM)	<0.35 %	TM132		5.76 #	4.38 #	4.43 #	5.97 #	14.2 #	3.33 #
pH	1 pH Units	TM133		9.67 M	9.38 M	9.26 M	9.46 M	8.98 M	8.98 M
Cyanide, Total	<1 mg/kg	TM153		1.38 M	<1 M	<1 M	1.57 M	5.74 M	1.63 M
Arsenic	<0.6 mg/kg	TM181		15.4 M	5.47 M	8.25 M	9.95 M	8.12 M	6.29 M
Cadmium	<0.02 mg/kg	TM181		0.632 M	0.389 M	<0.02 M	0.429 M	0.714 M	0.44 M
Chromium	<0.9 mg/kg	TM181		124 M	116 M	139 M	120 M	93.6 M	64.8 M
Copper	<1.4 mg/kg	TM181		38.2 M	21.4 M	26.6 M	51.6 M	26.3 M	34.4 M
Iron	<1000 mg/kg	TM181		79500 #	53700 #	85000 #	91500 #	66600 #	78800 #
Lead	<0.7 mg/kg	TM181		130 M	44.1 M	63.5 M	88.9 M	117 M	101 M
Manganese	<0.13 mg/kg	TM181		13200 M	11000 M	11800 M	11700 M	9800 M	7610 M
Mercury	<0.14 mg/kg	TM181		<0.14 M	<0.14 M	<0.14 M	<0.14 M	<0.14 M	<0.14 M
Nickel	<0.2 mg/kg	TM181		16.8 M	9.24 M	13.5 M	16.1 M	14.2 M	12.9 M
Selenium	<1 mg/kg	TM181		4.57 #	5.11 #	3.28 #	4.27 #	3.87 #	2.23 #
Vanadium	<0.2 mg/kg	TM181		139 #	137 #	146 #	173 #	119 #	103 #
Zinc	<1.9 mg/kg	TM181		380 M	217 M	289 M	355 M	361 M	378 M
Sulphate, acid soluble (total)	<0.02 %	TM221		0.338		0.445		0.299	
Calcium	<21 mg/kg	TM224		173000		181000		168000	
Magnesium	<8 mg/kg	TM224		22100		25400		21600	
Soluble Sulphate 2:1 extract as SO4 BRE	<0.004 g/l	TM243		0.139 M		0.219 M		0.0916 M	
Asbestos Quantification - Gravimetric - %	<0.001 %	TM304		<0.001 #		0.0011 #			
Asbestos Quantification - PCOM Evaluation - %	<0.001 %	TM304		<0.001 #		<0.001 #			
Additional Asbestos Components (Using TM048)		TM304		None #		None #			
Analysts Comments		TM304		N/C		N/A			
Asbestos Quantification - Total - %	<0.001 %	TM304		<0.001 #		0.0011 #			

Validated

CERTIFICATE OF ANALYSIS

SDG:	180118-49	**Client Reference:**		**Report Number:**	448302
Location:	Llanwern	**Order Number:**	LLA388	**Superseded Report:**	442943

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	W83-07	W83-08	W83-09	W84-01	W84-02	W84-03
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	17/01/2018	17/01/2018	17/01/2018	17/01/2018	17/01/2018	17/01/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	18/01/2018	18/01/2018	18/01/2018	18/01/2018	18/01/2018	18/01/2018
			SDG Ref	180118-49	180118-49	180118-49	180118-49	180118-49	180118-49
			Lab Sample No.(s)	16889568	16889572	16889576	16889531	16889585	16889637
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		13	9.5	11	8.5	14	15
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	<12 M	<12 M	<12 M	<12 M	<12 M
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M
Sulphur, Total	<0.02 %	TM132		0.278		0.421	0.224		0.339
Sulphate, Total potential	<0.06 %	TM132		0.834		1.26	0.672		1.02
Soil Organic Matter (SOM)	<0.35 %	TM132		2.5 #	21.6 #	3.33 #	2.26 #	19.7 #	6.05 #
pH	1 pH Units	TM133		9.29 M	9.05 M	9.32 M	9.09 M	9.06 M	9.16 M
Cyanide, Total	<1 mg/kg	TM153		1.07 M	1.65 M	1.45 M	<1 M	<1 M	1.27 M
Arsenic	<0.6 mg/kg	TM181		14.1 M	7.36 M	7.19 M	4.95 M	7.39 M	8.68 M
Cadmium	<0.02 mg/kg	TM181		0.346 M	0.14 M	0.313 M	0.276 M	0.663 M	0.271 M
Chromium	<0.9 mg/kg	TM181		587 M	64.1 M	115 M	87.6 M	72.6 M	199 M
Copper	<1.4 mg/kg	TM181		50.9 M	16.6 M	39.8 M	23 M	27.1 M	33.5 M
Iron	<1000 mg/kg	TM181		102000 #	67900 #	83400 #	60700 #	49600 #	94900 #
Lead	<0.7 mg/kg	TM181		93.1 M	38 M	43.6 M	54.9 M	76.6 M	95.7 M
Manganese	<0.13 mg/kg	TM181		11700 M	16000 M	11000 M	10500 M	6900 M	15800 M
Mercury	<0.14 mg/kg	TM181		<1.4 M	<0.14 M	<0.14 M	<0.14 M	<0.14 M	<1.4 M
Nickel	<0.2 mg/kg	TM181		49.4 M	11.6 M	13 M	9.55 M	15.5 M	20.5 M
Selenium	<1 mg/kg	TM181		<10 #	2.96 #	3.71 #	4.07 #	3.43 #	<10 #
Vanadium	<0.2 mg/kg	TM181		202 #	78.3 #	157 #	106 #	102 #	280 #
Zinc	<1.9 mg/kg	TM181		259 M	176 M	236 M	208 M	293 M	287 M
Sulphate, acid soluble (total)	<0.02 %	TM221		0.384		1.16	0.364		0.433
Calcium	<21 mg/kg	TM224		193000		191000	211000		178000
Magnesium	<8 mg/kg	TM224		27000		26900	35600		15000
Soluble Sulphate 2:1 extract as SO4 BRE	<0.004 g/l	TM243		0.17 M		0.137 M	0.114 M		0.304 M
Asbestos Quantification - Gravimetric - %	<0.001 %	TM304		<0.001 #		0.0088 #	<0.001 #		<0.001 #
Asbestos Quantification - PCOM Evaluation - %	<0.001 %	TM304		<0.001 #		<0.001 #	<0.001 #		<0.001 #
Additional Asbestos Components (Using TM048)		TM304		None #		None #	None #		None #
Analysts Comments		TM304		N/A		N/A	N/A		N/C
Asbestos Quantification - Total - %	<0.001 %	TM304		<0.001 #		0.0088 #	<0.001 #		<0.001 #

CERTIFICATE OF ANALYSIS

SDG:	180118-49	**Client Reference:**		**Report Number:**	448302
Location:	Llanwern	**Order Number:**	LLA388	**Superseded Report:**	442943

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	W84-04	W84-05	W84-06	W84-07	W84-08	W84-09
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	17/01/2018	17/01/2018	17/01/2018	17/01/2018	17/01/2018	17/01/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	18/01/2018	18/01/2018	18/01/2018	18/01/2018	18/01/2018	18/01/2018
			SDG Ref	180118-49	180118-49	180118-49	180118-49	180118-49	180118-49
			Lab Sample No.(s)	16889643	16889648	16889652	16889656	16889665	16889669
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		13	13	12	12	11	14
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	<12 M	<12 M	<12 M	<12 M	<12 M
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	0.0114 M	<0.01 M	<0.01 M	<0.01 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M
Sulphur, Total	<0.02 %	TM132			0.38		0.398		0.309
Sulphate, Total potential	<0.06 %	TM132			1.14		1.19		0.927
Soil Organic Matter (SOM)	<0.35 %	TM132		18.8 #	8.15 #	4.15 #	5.93 #	3.6 #	3.83 #
pH	1 pH Units	TM133		9.28 M	8.78 M	8.44 M	8.79 M	9.07 M	9.09 M
Cyanide, Total	<1 mg/kg	TM153		1.15 M	<1 M	<1 M	<1 M	1.43 M	<1 M
Arsenic	<0.6 mg/kg	TM181		7.5 M	6.53 M	7.99 M	6.52 M	6.65 M	7.94 M
Cadmium	<0.02 mg/kg	TM181		0.577 M	0.196 M	0.388 M	1.48 M	0.391 M	0.308 M
Chromium	<0.9 mg/kg	TM181		133 M	128 M	162 M	137 M	199 M	117 M
Copper	<1.4 mg/kg	TM181		33.5 M	30.3 M	57.8 M	31.2 M	34 M	25.6 M
Iron	<1000 mg/kg	TM181		52600 #	71400 #	87000 #	60900 #	86200 #	73300 #
Lead	<0.7 mg/kg	TM181		59.5 M	52.6 M	141 M	91.2 M	83 M	62.6 M
Manganese	<0.13 mg/kg	TM181		11300 M	12300 M	16000 M	13300 M	20000 M	11700 M
Mercury	<0.14 mg/kg	TM181		<0.14 M	<0.14 M	<0.14 M	<0.14 M	<0.14 M	<0.14 M
Nickel	<0.2 mg/kg	TM181		10.8 M	12.7 M	14.4 M	14.1 M	13.1 M	13.1 M
Selenium	<1 mg/kg	TM181		5.66 #	5.51 #	5.46 #	5.96 #	6.76 #	4.43 #
Vanadium	<0.2 mg/kg	TM181		338 #	141 #	160 #	196 #	278 #	204 #
Zinc	<1.9 mg/kg	TM181		272 M	225 M	262 M	208 M	263 M	302 M
Sulphate, acid soluble (total)	<0.02 %	TM221			0.585		0.505		0.396
Calcium	<21 mg/kg	TM224			185000		179000		181000
Magnesium	<8 mg/kg	TM224			25500		24700		27500
Soluble Sulphate 2:1 extract as SO4 BRE	<0.004 g/l	TM243			0.455 M		0.32 M		0.169 M
Asbestos Quantification - Gravimetric - %	<0.001 %	TM304			<0.001 #		<0.001 #		
Asbestos Quantification - PCOM Evaluation - %	<0.001 %	TM304			<0.001 #		<0.001 #		
Additional Asbestos Components (Using TM048)		TM304			None #		None #		
Analysts Comments		TM304			N/A		N/C		
Asbestos Quantification - Total - %	<0.001 %	TM304			<0.001 #		<0.001 #		

Validated

CERTIFICATE OF ANALYSIS

SDG:	180118-49	**Client Reference:**		**Report Number:**	448302
Location:	Llanwern	**Order Number:**	LLA388	**Superseded Report:**	442943

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	W134-01	W134-02	W134-03	W134-04	W134-05	W134-06
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	17/01/2018	17/01/2018	17/01/2018	17/01/2018	17/01/2018	17/01/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	18/01/2018	18/01/2018	18/01/2018	18/01/2018	18/01/2018	18/01/2018
			SDG Ref	180118-49	180118-49	180118-49	180118-49	180118-49	180118-49
			Lab Sample No.(s)	16889580	16889590	16889597	16889602	16889610	16889615
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		14	15	14	7.7	13	13
Gross Calorific Value in Dry Matter Q(V/gr/d)	<0.5 MJ/kg	SUB		7.1	5.62	6.58	7	6.16	7.43
Gross Calorific Value Original Q(V/gr/ar)	<0.5 MJ/kg	SUB		6.1	4.78	5.5	6.15	5.41	6.24
Net Calorific Value in Dry Matter Q(V/net/d)	<0.5 MJ/kg	SUB		6.84	5.41	6.35	6.76	5.94	7.18
Net Calorific Value in Original Q(V/net/ar)	<0.5 MJ/kg	SUB		5.55	4.26	4.93	5.67	4.94	5.66
Water Analytical M (ad)	<0.5 %	SUB		1.46	1.6	1.31	1.29	1.35	1.2
Water Gross M(ex)	<0.5 %	SUB		12.8	13.5	15.3	11	11	15
Water Total M(ar)	<0.5 %	SUB		14.1	14.9	16.4	12.1	12.2	16
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	<12 M	<12 M	<12 M	<12 M	<12 M
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	0.0117 M	0.0108 M	0.057 M	<0.01 M
Cresols	<0.01 mg/kg	TM062 (S)		0.0115 M	<0.01 M	<0.01 M	<0.01 M	0.0114 M	<0.01 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 M	<0.035 M	<0.035 M	0.0684 M	<0.035 M
Sulphur, Total	<0.02 %	TM132		0.292		0.272		0.42	
Sulphate, Total potential	<0.06 %	TM132		0.876		0.816		1.26	
Soil Organic Matter (SOM)	<0.35 %	TM132		15.7 #	14.6 #	4.98 #	3.83 #	3.28 #	22.1 #
pH	1 pH Units	TM133		10.9 M	11.1 M	10.9 M	10.9 M	11 M	10.9 M
Cyanide, Total	<1 mg/kg	TM153		1.38 M	1.24 M	1.4 M	1.73 M	1.7 M	<1 M
Arsenic	<0.6 mg/kg	TM181		6.93 M	6.88 M	7.28 M	6.35 M	6.89 M	7.11 M
Cadmium	<0.02 mg/kg	TM181		<0.2 M	0.23 M	0.391 M	0.363 M	0.272 M	<0.02 M
Chromium	<0.9 mg/kg	TM181		420 M	297 M	659 M	176 M	191 M	318 M
Copper	<1.4 mg/kg	TM181		29.5 M	23.5 M	18.3 M	15.7 M	15.3 M	21.6 M
Iron	<1000 mg/kg	TM181		119000 #	92800 #	115000 #	81400 #	69200 #	102000 #
Lead	<0.7 mg/kg	TM181		96.4 M	64.2 M	119 M	63.4 M	70.8 M	56.6 M
Manganese	<0.13 mg/kg	TM181		19600 M	19200 M	16600 M	19900 M	14500 M	16300 M
Mercury	<0.14 mg/kg	TM181		<1.4 M	<0.14 M	<1.4 M	<0.14 M	<0.14 M	<0.14 M
Nickel	<0.2 mg/kg	TM181		17.5 M	13.1 M	18.4 M	8.62 M	8.65 M	12 M
Selenium	<1 mg/kg	TM181		12.4 #	6.74 #	10.4 #	8.53 #	5.86 #	5.32 #
Vanadium	<0.2 mg/kg	TM181		317 #	255 #	324 #	124 #	153 #	247 #
Zinc	<1.9 mg/kg	TM181		292 M	297 M	425 M	322 M	337 M	249 M
Sulphate, acid soluble (total)	<0.02 %	TM221		0.325		0.248		0.496	
Calcium	<21 mg/kg	TM224		162000		155000		190000	
Magnesium	<8 mg/kg	TM224		11100		14900		16600	

Validated

CERTIFICATE OF ANALYSIS

SDG:	180118-49	**Client Reference:**		**Report Number:**	448302
Location:	Llanwern	**Order Number:**	LLA388	**Superseded Report:**	442943

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	W134-01	W134-02	W134-03	W134-04	W134-05	W134-06
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	17/01/2018	17/01/2018	17/01/2018	17/01/2018	17/01/2018	17/01/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	18/01/2018	18/01/2018	18/01/2018	18/01/2018	18/01/2018	18/01/2018
			SDG Ref	180118-49	180118-49	180118-49	180118-49	180118-49	180118-49
			Lab Sample No.(s)	16889580	16889590	16889597	16889602	16889610	16889615
			AGS Reference						
Soluble Sulphate 2:1 extract as SO4 BRE	<0.004 g/l	TM243		0.123 M		0.139 M		0.133 M	
Asbestos Quantification - Gravimetric - %	<0.001 %	TM304						<0.001 #	
Asbestos Quantification - PCOM Evaluation - %	<0.001 %	TM304						<0.001 #	
Additional Asbestos Components (Using TM048)		TM304						None #	
Analysts Comments		TM304						N/C	
Asbestos Quantification - Total - %	<0.001 %	TM304						<0.001 #	

CERTIFICATE OF ANALYSIS

SDG:	180118-49	**Client Reference:**		**Report Number:**	448302
Location:	Llanwern	**Order Number:**	LLA388	**Superseded Report:**	442943

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	W134-07	W134-08	W134-09			
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00			
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)			
			Date Sampled	17/01/2018	17/01/2018	17/01/2018			
			Sample Time	00:00	00:00	00:00			
			Date Received	18/01/2018	18/01/2018	18/01/2018			
			SDG Ref	180118-49	180118-49	180118-49			
			Lab Sample No.(s)	16889621	16889626	16889631			
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		15	16	14			
Gross Calorific Value in Dry Matter Q(V/gr/d)	<0.5 MJ/kg	SUB		6.11	6.93	8.23			
Gross Calorific Value Original Q(V/gr/ar)	<0.5 MJ/kg	SUB		5.08	5.74	7.02			
Net Calorific Value in Dry Matter Q(V/net/d)	<0.5 MJ/kg	SUB		5.75	6.68	8.01			
Net Calorific Value in Original Q(V/net/ar)	<0.5 MJ/kg	SUB		4.4	5.13	6.49			
Water Analytical M (ad)	<0.5 %	SUB		1.46	1.35	1.16			
Water Gross M(ex)	<0.5 %	SUB		15.5	16.1	13.7			
Water Total M(ar)	<0.5 %	SUB		16.8	17.2	14.7			
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	<12 M	<12 M			
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M			
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M			
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M	<0.015 M			
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 M	<0.035 M			
Sulphur, Total	<0.02 %	TM132		0.296		0.233			
Sulphate, Total potential	<0.06 %	TM132		0.888		0.699			
Soil Organic Matter (SOM)	<0.35 %	TM132		5.52 #	22.2 #	9.46 #			
pH	1 pH Units	TM133		11.2 M	11.1 M	10.9 M			
Cyanide, Total	<1 mg/kg	TM153		1.19 M	<1 M	1.13 M			
Arsenic	<0.6 mg/kg	TM181		6.44 M	6.34 M	<6 M			
Cadmium	<0.02 mg/kg	TM181		<0.2 M	<0.02 M	<0.2 M			
Chromium	<0.9 mg/kg	TM181		421 M	248 M	987 M			
Copper	<1.4 mg/kg	TM181		27.8 M	20.1 M	<14 M			
Iron	<1000 mg/kg	TM181		94900 #	83500 #	151000 #			
Lead	<0.7 mg/kg	TM181		81 M	61.4 M	63.3 M			
Manganese	<0.13 mg/kg	TM181		18800 M	7490 M	36400 M			
Mercury	<0.14 mg/kg	TM181		<1.4 M	<0.14 M	<1.4 M			
Nickel	<0.2 mg/kg	TM181		14.7 M	11.9 M	7.98 M			
Selenium	<1 mg/kg	TM181		11.3 #	5.32 #	21.4 #			
Vanadium	<0.2 mg/kg	TM181		453 #	188 #	690 #			
Zinc	<1.9 mg/kg	TM181		272 M	267 M	214 M			
Sulphate, acid soluble (total)	<0.02 %	TM221		0.365		0.281			
Calcium	<21 mg/kg	TM224		183000		218000			
Magnesium	<8 mg/kg	TM224		14500		20400			

Validated

CERTIFICATE OF ANALYSIS

SDG:	180118-49	**Client Reference:**		**Report Number:**	448302
Location:	Llanwern	**Order Number:**	LLA388	**Superseded Report:**	442943

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	W134-07	W134-08	W134-09			
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00			
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)			
			Date Sampled	17/01/2018	17/01/2018	17/01/2018			
			Sample Time	00:00	00:00	00:00			
			Date Received	18/01/2018	18/01/2018	18/01/2018			
			SDG Ref	180118-49	180118-49	180118-49			
			Lab Sample No.(s)	16889621	16889626	16889631			
			AGS Reference						
Soluble Sulphate 2:1 extract as SO4 BRE	<0.004 g/l	TM243		0.148 M		0.187 M			
Asbestos Quantification - Gravimetric - %	<0.001 %	TM304		<0.001 #					
Asbestos Quantification - PCOM Evaluation - %	<0.001 %	TM304		<0.001 #					
Additional Asbestos Components (Using TM048)		TM304		None #					
Analysts Comments		TM304		N/A					
Asbestos Quantification - Total - %	<0.001 %	TM304		<0.001 #					

Validated

CERTIFICATE OF ANALYSIS

SDG:	180118-49	**Client Reference:**		**Report Number:**	448302
Location:	Llanwern	**Order Number:**	LLA388	**Superseded Report:**	442943

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	W83-01	W83-02	W83-03	W83-04	W83-05	W83-06
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	17/01/2018	17/01/2018	17/01/2018	17/01/2018	17/01/2018	17/01/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	18/01/2018	18/01/2018	18/01/2018	18/01/2018	18/01/2018	18/01/2018
			SDG Ref	180118-49	180118-49	180118-49	180118-49	180118-49	180118-49
			Lab Sample No.(s)	16889538	16889542	16889548	16889554	16889559	16889564
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		104	98.4	93.5	99.5	93.3	101
Acenaphthene-d10 % recovery**	%	TM218		101	97.1	89.1	97.6	91.6	99.4
Phenanthrene-d10 % recovery**	%	TM218		98.5	93.6	88.4	94.5	92.2	99.5
Chrysene-d12 % recovery**	%	TM218		109	97.1	99.4	102	95.4	102
Perylene-d12 % recovery**	%	TM218		106	95.2	109	97.3	105	115
Naphthalene	<0.009 mg/kg	TM218		0.147 M	0.166 M	0.113 M	0.169 M	0.122 M	0.116 M
Acenaphthylene	<0.012 mg/kg	TM218		0.0424 M	0.304 M	0.0366 M	0.0536 M	0.0334 M	0.0289 M
Acenaphthene	<0.008 mg/kg	TM218		0.0366 M	2.15 M	0.0252 M	0.0513 M	0.0263 M	0.0198 M
Fluorene	<0.01 mg/kg	TM218		0.0386 M	0.533 M	0.026 M	0.0529 M	0.0331 M	0.0253 M
Phenanthrene	<0.015 mg/kg	TM218		0.341 M	4.58 M	0.308 M	0.725 M	0.454 M	0.26 M
Anthracene	<0.016 mg/kg	TM218		0.1 M	1.15 M	0.0998 M	0.347 M	0.14 M	0.103 M
Fluoranthene	<0.017 mg/kg	TM218		0.684 M	37 M	0.601 M	2.82 M	1.56 M	0.384 M
Pyrene	<0.015 mg/kg	TM218		0.804 M	26 M	0.585 M	2.64 M	1.36 M	0.375 M
Benz(a)anthracene	<0.014 mg/kg	TM218		0.47 M	10.6 M	0.48 M	1.65 M	1.2 M	0.414 M
Chrysene	<0.01 mg/kg	TM218		0.55 M	10.5 M	0.532 M	1.8 M	1.15 M	0.557 M
Benzo(b)fluoranthene	<0.015 mg/kg	TM218		0.77 M	11.5 M	1.03 M	1.91 M	1.34 M	0.744 M
Benzo(k)fluoranthene	<0.014 mg/kg	TM218		0.288 M	4.11 M	0.326 M	0.753 M	0.591 M	0.318 M
Benzo(a)pyrene	<0.015 mg/kg	TM218		0.457 M	6.46 M	0.637 M	1.28 M	0.991 M	0.536 M
Indeno(1,2,3-cd)pyrene	<0.018 mg/kg	TM218		0.361 M	4.12 M	0.46 M	0.814 M	0.589 M	0.415 M
Dibenzo(a,h)anthracene	<0.023 mg/kg	TM218		0.113 M	1.44 M	0.141 M	0.253 M	0.182 M	0.128 M
Benzo(g,h,i)perylene	<0.024 mg/kg	TM218		0.44 M	4.47 M	0.592 M	0.996 M	0.685 M	0.503 M
PAH, Total Detected USEPA 16	<0.118 mg/kg	TM218		5.64	125	6	16.3	10.4	4.93

Validated

CERTIFICATE OF ANALYSIS

SDG:	180118-49	**Client Reference:**		**Report Number:**	448302
Location:	Llanwern	**Order Number:**	LLA388	**Superseded Report:**	442943

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	W83-07	W83-08	W83-09	W84-01	W84-02	W84-03
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	17/01/2018	17/01/2018	17/01/2018	17/01/2018	17/01/2018	17/01/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	18/01/2018	18/01/2018	18/01/2018	18/01/2018	18/01/2018	18/01/2018
			SDG Ref	180118-49	180118-49	180118-49	180118-49	180118-49	180118-49
			Lab Sample No.(s)	16889568	16889572	16889576	16889531	16889585	16889637
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		92.9	94.1	100	99.1	108	98.8
Acenaphthene-d10 % recovery**	%	TM218		91	92.7	99.7	95	106	96.8
Phenanthrene-d10 % recovery**	%	TM218		91.8	92.7	99.8	95.4	103	94.6
Chrysene-d12 % recovery**	%	TM218		94.6	95.3	105	99.7	110	101
Perylene-d12 % recovery**	%	TM218		104	106	116	112	106	97.2
Naphthalene	<0.009 mg/kg	TM218		0.122 M	0.0953 M	0.18 M	0.129 M	0.203 M	0.151 M
Acenaphthylene	<0.012 mg/kg	TM218		0.0369 M	0.045 M	0.0796 M	0.0242 M	0.0586 M	0.0354 M
Acenaphthene	<0.008 mg/kg	TM218		<0.008 M	0.0249 M	0.0536 M	0.0281 M	0.0394 M	0.0935 M
Fluorene	<0.01 mg/kg	TM218		0.05 M	0.0273 M	0.0798 M	0.0268 M	0.0452 M	0.0716 M
Phenanthrene	<0.015 mg/kg	TM218		0.456 M	0.309 M	0.778 M	0.311 M	0.547 M	0.384 M
Anthracene	<0.016 mg/kg	TM218		0.461 M	0.126 M	0.224 M	0.0696 M	0.158 M	0.1 M
Fluoranthene	<0.017 mg/kg	TM218		0.754 M	0.76 M	1.29 M	0.554 M	0.963 M	0.709 M
Pyrene	<0.015 mg/kg	TM218		0.66 M	0.656 M	1.1 M	0.563 M	0.894 M	0.697 M
Benz(a)anthracene	<0.014 mg/kg	TM218		0.614 M	0.672 M	0.961 M	0.588 M	0.694 M	0.495 M
Chrysene	<0.01 mg/kg	TM218		0.746 M	0.648 M	0.942 M	0.675 M	0.88 M	0.629 M
Benzo(b)fluoranthene	<0.015 mg/kg	TM218		1.52 M	0.904 M	1.39 M	1.05 M	1.31 M	0.909 M
Benzo(k)fluoranthene	<0.014 mg/kg	TM218		0.356 M	0.328 M	0.543 M	0.438 M	0.458 M	0.291 M
Benzo(a)pyrene	<0.015 mg/kg	TM218		0.702 M	0.649 M	1.09 M	0.759 M	0.783 M	0.553 M
Indeno(1,2,3-cd)pyrene	<0.018 mg/kg	TM218		0.495 M	0.392 M	0.733 M	0.59 M	0.611 M	0.444 M
Dibenzo(a,h)anthracene	<0.023 mg/kg	TM218		0.126 M	0.136 M	0.21 M	0.166 M	0.187 M	0.138 M
Benzo(g,h,i)perylene	<0.024 mg/kg	TM218		0.583 M	0.512 M	0.847 M	0.744 M	0.783 M	0.562 M
PAH, Total Detected USEPA 16	<0.118 mg/kg	TM218		7.68	6.29	10.5	6.72	8.62	6.26

Validated

CERTIFICATE OF ANALYSIS

SDG:	180118-49	**Client Reference:**		**Report Number:**	448302
Location:	Llanwern	**Order Number:**	LLA388	**Superseded Report:**	442943

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	W84-04	W84-05	W84-06	W84-07	W84-08	W84-09
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	17/01/2018	17/01/2018	17/01/2018	17/01/2018	17/01/2018	17/01/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	18/01/2018	18/01/2018	18/01/2018	18/01/2018	18/01/2018	18/01/2018
			SDG Ref	180118-49	180118-49	180118-49	180118-49	180118-49	180118-49
			Lab Sample No.(s)	16889643	16889648	16889652	16889656	16889665	16889669
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		105	101	109	93.7	101	96.9
Acenaphthene-d10 % recovery**	%	TM218		104	98.9	107	91.6	98.6	95.6
Phenanthrene-d10 % recovery**	%	TM218		100	99.4	104	91.7	95.3	96.1
Chrysene-d12 % recovery**	%	TM218		107	101	110	93.7	103	102
Perylene-d12 % recovery**	%	TM218		103	112	106	104	98.9	113
Naphthalene	<0.009 mg/kg	TM218		0.178 M	0.0992 M	0.252 M	0.116 M	0.161 M	0.194 M
Acenaphthylene	<0.012 mg/kg	TM218		0.047 M	0.042 M	0.0533 M	0.0493 M	0.051 M	0.0498 M
Acenaphthene	<0.008 mg/kg	TM218		0.0817 M	0.0212 M	0.0421 M	0.0213 M	0.0495 M	0.123 M
Fluorene	<0.01 mg/kg	TM218		0.13 M	0.0233 M	0.04 M	0.0265 M	0.0718 M	0.136 M
Phenanthrene	<0.015 mg/kg	TM218		0.814 M	0.263 M	0.45 M	0.257 M	0.578 M	2.06 M
Anthracene	<0.016 mg/kg	TM218		0.198 M	0.0706 M	0.124 M	0.0628 M	0.29 M	0.392 M
Fluoranthene	<0.017 mg/kg	TM218		1.11 M	0.47 M	0.685 M	0.476 M	1.03 M	3.8 M
Pyrene	<0.015 mg/kg	TM218		0.884 M	0.428 M	0.645 M	0.435 M	0.962 M	3.28 M
Benz(a)anthracene	<0.014 mg/kg	TM218		0.653 M	0.413 M	0.526 M	0.443 M	0.697 M	2.98 M
Chrysene	<0.01 mg/kg	TM218		0.71 M	0.473 M	0.639 M	0.476 M	0.816 M	2.92 M
Benzo(b)fluoranthene	<0.015 mg/kg	TM218		1.01 M	0.781 M	1.07 M	0.753 M	1.33 M	3.8 M
Benzo(k)fluoranthene	<0.014 mg/kg	TM218		0.358 M	0.277 M	0.345 M	0.308 M	0.386 M	1.81 M
Benzo(a)pyrene	<0.015 mg/kg	TM218		0.627 M	0.489 M	0.629 M	0.58 M	0.807 M	3.42 M
Indeno(1,2,3-cd)pyrene	<0.018 mg/kg	TM218		0.458 M	0.369 M	0.496 M	0.41 M	0.657 M	1.93 M
Dibenzo(a,h)anthracene	<0.023 mg/kg	TM218		0.151 M	0.106 M	0.162 M	0.115 M	0.187 M	0.647 M
Benzo(g,h,i)perylene	<0.024 mg/kg	TM218		0.564 M	0.456 M	0.629 M	0.489 M	0.843 M	2.11 M
PAH, Total Detected USEPA 16	<0.118 mg/kg	TM218		7.98	4.78	6.79	5.02	8.92	29.7

Validated

CERTIFICATE OF ANALYSIS

SDG:	180118-49	**Client Reference:**		**Report Number:**	448302
Location:	Llanwern	**Order Number:**	LLA388	**Superseded Report:**	442943

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	W134-01	W134-02	W134-03	W134-04	W134-05	W134-06
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	17/01/2018	17/01/2018	17/01/2018	17/01/2018	17/01/2018	17/01/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	18/01/2018	18/01/2018	18/01/2018	18/01/2018	18/01/2018	18/01/2018
			SDG Ref	180118-49	180118-49	180118-49	180118-49	180118-49	180118-49
			Lab Sample No.(s)	16889580	16889590	16889597	16889602	16889610	16889615
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		108	84.7	107	88.8	101	105
Acenaphthene-d10 % recovery**	%	TM218		106	80.8	99.5	82.1	98.5	98.7
Phenanthrene-d10 % recovery**	%	TM218		104	80.8	98.5	80.7	96.1	98.8
Chrysene-d12 % recovery**	%	TM218		106	87.8	103	84	99.8	106
Perylene-d12 % recovery**	%	TM218		102	90.9	106	91.5	96.7	108
Naphthalene	<0.009 mg/kg	TM218		13.7 M	11.4 M	19.8 M	11.2 M	7.96 M	11 M
Acenaphthylene	<0.012 mg/kg	TM218		3.38 M	3.66 M	3.67 M	2.88 M	2.23 M	3.43 M
Acenaphthene	<0.008 mg/kg	TM218		0.662 M	0.641 M	0.688 M	0.772 M	0.422 M	0.718 M
Fluorene	<0.01 mg/kg	TM218		3.5 M	5.02 M	3.55 M	2.67 M	2.16 M	3.99 M
Phenanthrene	<0.015 mg/kg	TM218		19.8 M	28.3 M	19.8 M	14.9 M	11.4 M	25.9 M
Anthracene	<0.016 mg/kg	TM218		6.24 M	9.38 M	6.04 M	5.73 M	3.46 M	10 M
Fluoranthene	<0.017 mg/kg	TM218		34.5 M	45.8 M	41.1 M	34.5 M	20.5 M	51.9 M
Pyrene	<0.015 mg/kg	TM218		24.3 M	30 M	28.6 M	23.8 M	14.5 M	35.2 M
Benz(a)anthracene	<0.014 mg/kg	TM218		14.6 M	18.2 M	19.9 M	15.8 M	8.49 M	22.9 M
Chrysene	<0.01 mg/kg	TM218		13.7 M	14.9 M	18.3 M	14.4 M	7.56 M	20.7 M
Benzo(b)fluoranthene	<0.015 mg/kg	TM218		19.2 M	20.5 M	25.3 M	18.1 M	10.5 M	25.4 M
Benzo(k)fluoranthene	<0.014 mg/kg	TM218		6.75 M	8.43 M	9.91 M	7.85 M	3.7 M	10.6 M
Benzo(a)pyrene	<0.015 mg/kg	TM218		12.8 M	15.7 M	19.4 M	15.6 M	7.67 M	19.7 M
Indeno(1,2,3-cd)pyrene	<0.018 mg/kg	TM218		8.45 M	9.1 M	12 M	10.2 M	4.96 M	11.5 M
Dibenzo(a,h)anthracene	<0.023 mg/kg	TM218		2.63 M	2.99 M	3.46 M	2.9 M	1.57 M	3.39 M
Benzo(g,h,i)perylene	<0.024 mg/kg	TM218		9.42 M	9.58 M	12.5 M	11 M	5.78 M	11.8 M
PAH, Total Detected USEPA 16	<0.118 mg/kg	TM218		194	234	244	192	113	268

CERTIFICATE OF ANALYSIS

SDG:	180118-49	**Client Reference:**		**Report Number:**	448302
Location:	Llanwern	**Order Number:**	LLA388	**Superseded Report:**	442943

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	W134-07	W134-08	W134-09			
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00			
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)			
			Date Sampled	17/01/2018	17/01/2018	17/01/2018			
			Sample Time	00:00	00:00	00:00			
			Date Received	18/01/2018	18/01/2018	18/01/2018			
			SDG Ref	180118-49	180118-49	180118-49			
			Lab Sample No.(s)	16889621	16889626	16889631			
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		98.4	95	95.8			
Acenaphthene-d10 % recovery**	%	TM218		97.9	93.5	92.2			
Phenanthrene-d10 % recovery**	%	TM218		95.9	94.3	91.6			
Chrysene-d12 % recovery**	%	TM218		102	102	98			
Perylene-d12 % recovery**	%	TM218		107	111	103			
Naphthalene	<0.009 mg/kg	TM218		12.3 M	4.15 M	10.8 M			
Acenaphthylene	<0.012 mg/kg	TM218		3.3 M	1.31 M	3.94 M			
Acenaphthene	<0.008 mg/kg	TM218		0.733 M	0.207 M	0.595 M			
Fluorene	<0.01 mg/kg	TM218		4.24 M	0.931 M	3.83 M			
Phenanthrene	<0.015 mg/kg	TM218		23 M	5.6 M	24.7 M			
Anthracene	<0.016 mg/kg	TM218		5.93 M	1.95 M	7.26 M			
Fluoranthene	<0.017 mg/kg	TM218		37 M	12.8 M	48.7 M			
Pyrene	<0.015 mg/kg	TM218		26.1 M	9.41 M	34.6 M			
Benz(a)anthracene	<0.014 mg/kg	TM218		18.1 M	6.97 M	23.1 M			
Chrysene	<0.01 mg/kg	TM218		15.1 M	6.18 M	19.7 M			
Benzo(b)fluoranthene	<0.015 mg/kg	TM218		22.2 M	8.48 M	27.3 M			
Benzo(k)fluoranthene	<0.014 mg/kg	TM218		10.3 M	3.49 M	11.9 M			
Benzo(a)pyrene	<0.015 mg/kg	TM218		16.8 M	7.07 M	21.9 M			
Indeno(1,2,3-cd)pyrene	<0.018 mg/kg	TM218		10 M	4.55 M	13.3 M			
Dibenzo(a,h)anthracene	<0.023 mg/kg	TM218		3.41 M	1.34 M	3.84 M			
Benzo(g,h,i)perylene	<0.024 mg/kg	TM218		10.3 M	4.69 M	13.7 M			
PAH, Total Detected USEPA 16	<0.118 mg/kg	TM218		219	79.1	269			

Validated

CERTIFICATE OF ANALYSIS

SDG:	180118-49	**Client Reference:**		**Report Number:**	448302
Location:	Llanwern	**Order Number:**	LLA388	**Superseded Report:**	442943

TPH CWG (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	W83-01	W83-02	W83-03	W83-04	W83-05	W83-06
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	17/01/2018	17/01/2018	17/01/2018	17/01/2018	17/01/2018	17/01/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	18/01/2018	18/01/2018	18/01/2018	18/01/2018	18/01/2018	18/01/2018
			SDG Ref	180118-49	180118-49	180118-49	180118-49	180118-49	180118-49
			Lab Sample No.(s)	16889538	16889542	16889548	16889554	16889559	16889564
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		50	94	98	79	87	86
GRO TOT (Moisture Corrected)	<0.044 mg/kg	TM089		<0.176 M	<0.176 M	<0.176 M	<0.176 M	<0.176 M	<0.176 M
Methyl tertiary butyl ether (MTBE)	<0.005 mg/kg	TM089		<0.02 #	<0.02 #	<0.02 #	<0.02 #	<0.02 #	<0.02 #
Benzene	<0.01 mg/kg	TM089		<0.04 M	<0.04 M	<0.04 M	<0.04 M	<0.04 M	<0.04 M
Toluene	<0.002 mg/kg	TM089		<0.008 M	<0.008 M	<0.008 M	<0.008 M	<0.008 M	<0.008 M
Ethylbenzene	<0.003 mg/kg	TM089		<0.012 M	<0.012 M	<0.012 M	<0.012 M	<0.012 M	<0.012 M
m,p-Xylene	<0.006 mg/kg	TM089		<0.024 M	<0.024 M	<0.024 M	<0.024 M	<0.024 M	<0.024 M
o-Xylene	<0.003 mg/kg	TM089		<0.012 M	<0.012 M	<0.012 M	<0.012 M	<0.012 M	<0.012 M
sum of detected mpo xylene by GC	<0.009 mg/kg	TM089		<0.009	<0.009	<0.009	<0.009	<0.009	<0.009
sum of detected BTEX by GC	<0.024 mg/kg	TM089		<0.024	<0.024	<0.024	<0.024	<0.024	<0.024
Aliphatics >C5-C6	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Aliphatics >C6-C8	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Aliphatics >C8-C10	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Aliphatics >C10-C12	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Aliphatics >C12-C16	<0.1 mg/kg	TM173		6.05	1.99	2.87	3.35	1.14	0.818
Aliphatics >C16-C21	<0.1 mg/kg	TM173		38.4	11.5	15.8	23.4	11.2	9.72
Aliphatics >C21-C35	<0.1 mg/kg	TM173		502	104	161	310	174	160
Aliphatics >C35-C44	<0.1 mg/kg	TM173		211	32.3	51	102	52.9	50
Total Aliphatics >C12-C44	<0.1 mg/kg	TM173		757	149	231	439	240	220
Aromatics >EC5-EC7	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Aromatics >EC7-EC8	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Aromatics >EC8-EC10	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Aromatics >EC10-EC12	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Aromatics >EC12-EC16	<0.1 mg/kg	TM173		1.87	1.34	1.27	1.45	1.63	1.17
Aromatics >EC16-EC21	<0.1 mg/kg	TM173		15.7	4.95	5.93	11	9.22	7.03
Aromatics >EC21-EC35	<0.1 mg/kg	TM173		206	48.1	51	121	89.1	80.5
Aromatics >EC35-EC44	<0.1 mg/kg	TM173		201	25.7	23.5	64.9	40.3	41.8
Aromatics >EC40-EC44	<0.1 mg/kg	TM173		89.4	9.71	8.02	25.7	14.8	16.7
Total Aromatics >EC12-EC44	<0.1 mg/kg	TM173		425	80	81.8	198	140	130
Total Aliphatics & Aromatics >C5-C44	<0.1 mg/kg	TM173		1180	229	312	637	380	351

Validated

CERTIFICATE OF ANALYSIS

SDG:	180118-49	**Client Reference:**		**Report Number:**	448302
Location:	Llanwern	**Order Number:**	LLA388	**Superseded Report:**	442943

TPH CWG (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	W83-07	W83-08	W83-09	W84-01	W84-02	W84-03
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	17/01/2018	17/01/2018	17/01/2018	17/01/2018	17/01/2018	17/01/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	18/01/2018	18/01/2018	18/01/2018	18/01/2018	18/01/2018	18/01/2018
			SDG Ref	180118-49	180118-49	180118-49	180118-49	180118-49	180118-49
			Lab Sample No.(s)	16889568	16889572	16889576	16889531	16889585	16889637
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		94	86	83	83	79	84
GRO TOT (Moisture Corrected)	<0.044 mg/kg	TM089		<0.176 M	<0.176 M	<0.176 M	<0.176 M	<0.176 M	<0.176 M
Methyl tertiary butyl ether (MTBE)	<0.005 mg/kg	TM089		<0.02 #	<0.02 #	<0.02 #	<0.02 #	<0.02 #	<0.02 #
Benzene	<0.01 mg/kg	TM089		<0.04 M	<0.04 M	<0.04 M	<0.04 M	<0.04 M	<0.04 M
Toluene	<0.002 mg/kg	TM089		<0.008 M	<0.008 M	<0.008 M	<0.008 M	<0.008 M	<0.008 M
Ethylbenzene	<0.003 mg/kg	TM089		<0.012 M	<0.012 M	<0.012 M	<0.012 M	<0.012 M	<0.012 M
m,p-Xylene	<0.006 mg/kg	TM089		<0.024 M	<0.024 M	<0.024 M	<0.024 M	<0.024 M	<0.024 M
o-Xylene	<0.003 mg/kg	TM089		<0.012 M	<0.012 M	<0.012 M	<0.012 M	<0.012 M	<0.012 M
sum of detected mpo xylene by GC	<0.009 mg/kg	TM089		<0.009	<0.009	<0.009	<0.009	<0.009	<0.009
sum of detected BTEX by GC	<0.024 mg/kg	TM089		<0.024	<0.024	<0.024	<0.024	<0.024	<0.024
Aliphatics >C5-C6	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Aliphatics >C6-C8	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Aliphatics >C8-C10	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Aliphatics >C10-C12	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Aliphatics >C12-C16	<0.1 mg/kg	TM173		1.7	4.22	1.74	1.43	1.6	3.59
Aliphatics >C16-C21	<0.1 mg/kg	TM173		13.2	12.5	18.8	23.2	9.01	20.8
Aliphatics >C21-C35	<0.1 mg/kg	TM173		133	79	229	376	73.6	190
Aliphatics >C35-C44	<0.1 mg/kg	TM173		46.5	27.9	89.6	129	24.6	50.7
Total Aliphatics >C12-C44	<0.1 mg/kg	TM173		195	124	340	530	109	265
Aromatics >EC5-EC7	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Aromatics >EC7-EC8	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Aromatics >EC8-EC10	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Aromatics >EC10-EC12	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Aromatics >EC12-EC16	<0.1 mg/kg	TM173		1.66	0.85	0.888	1.03	1.05	1.34
Aromatics >EC16-EC21	<0.1 mg/kg	TM173		11.2	6.44	8.12	9.53	4.82	9.73
Aromatics >EC21-EC35	<0.1 mg/kg	TM173		78.7	51.2	116	133	46.7	82
Aromatics >EC35-EC44	<0.1 mg/kg	TM173		43.4	37.5	88.6	71.7	29.1	38.5
Aromatics >EC40-EC44	<0.1 mg/kg	TM173		16.5	16.3	37.9	28.6	11	15.6
Total Aromatics >EC12-EC44	<0.1 mg/kg	TM173		135	96	214	215	81.6	132
Total Aliphatics & Aromatics >C5-C44	<0.1 mg/kg	TM173		330	220	553	745	190	397

Validated

CERTIFICATE OF ANALYSIS

SDG:	180118-49	**Client Reference:**		**Report Number:**	448302
Location:	Llanwern	**Order Number:**	LLA388	**Superseded Report:**	442943

TPH CWG (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	W84-04	W84-05	W84-06	W84-07	W84-08	W84-09
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	17/01/2018	17/01/2018	17/01/2018	17/01/2018	17/01/2018	17/01/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	18/01/2018	18/01/2018	18/01/2018	18/01/2018	18/01/2018	18/01/2018
			SDG Ref	180118-49	180118-49	180118-49	180118-49	180118-49	180118-49
			Lab Sample No.(s)	16889643	16889648	16889652	16889656	16889665	16889669
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		87	93	99	94	42	102
GRO TOT (Moisture Corrected)	<0.044 mg/kg	TM089		<0.176 M	<0.176 M	<0.176 M	<0.176 M	0.27 M	<0.176 M
Methyl tertiary butyl ether (MTBE)	<0.005 mg/kg	TM089		<0.02 #	<0.02 #	<0.02 #	<0.02 #	<0.02 #	<0.02 #
Benzene	<0.01 mg/kg	TM089		<0.04 M	<0.04 M	<0.04 M	<0.04 M	<0.04 M	<0.04 M
Toluene	<0.002 mg/kg	TM089		<0.008 M	<0.008 M	<0.008 M	<0.008 M	<0.008 M	<0.008 M
Ethylbenzene	<0.003 mg/kg	TM089		<0.012 M	<0.012 M	<0.012 M	<0.012 M	<0.012 M	<0.012 M
m,p-Xylene	<0.006 mg/kg	TM089		<0.024 M	<0.024 M	<0.024 M	<0.024 M	<0.024 M	<0.024 M
o-Xylene	<0.003 mg/kg	TM089		<0.012 M	<0.012 M	<0.012 M	<0.012 M	<0.012 M	<0.012 M
sum of detected mpo xylene by GC	<0.009 mg/kg	TM089		<0.009	<0.009	<0.009	<0.009	<0.009	<0.009
sum of detected BTEX by GC	<0.024 mg/kg	TM089		<0.024	<0.024	<0.024	<0.024	<0.024	<0.024
Aliphatics >C5-C6	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Aliphatics >C6-C8	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Aliphatics >C8-C10	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	0.102	<0.04
Aliphatics >C10-C12	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Aliphatics >C12-C16	<0.1 mg/kg	TM173		1.82	<0.1	1.4	1.15	0.671	1.69
Aliphatics >C16-C21	<0.1 mg/kg	TM173		13.7	1.61	9.79	6.85	17.3	10.1
Aliphatics >C21-C35	<0.1 mg/kg	TM173		174	38.1	92.6	60.2	299	118
Aliphatics >C35-C44	<0.1 mg/kg	TM173		62.6	9.92	27.6	14.4	104	38.7
Total Aliphatics >C12-C44	<0.1 mg/kg	TM173		253	49.6	131	82.6	421	168
Aromatics >EC5-EC7	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Aromatics >EC7-EC8	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Aromatics >EC8-EC10	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	0.0701	<0.04
Aromatics >EC10-EC12	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Aromatics >EC12-EC16	<0.1 mg/kg	TM173		0.872	0.772	0.946	1.31	1.07	1.05
Aromatics >EC16-EC21	<0.1 mg/kg	TM173		6.61	3.57	6.84	5.23	8.83	6.26
Aromatics >EC21-EC35	<0.1 mg/kg	TM173		77.9	27.6	59.2	37.5	116	61.4
Aromatics >EC35-EC44	<0.1 mg/kg	TM173		50.1	16.3	24.3	14.8	65	32
Aromatics >EC40-EC44	<0.1 mg/kg	TM173		19.9	6.79	9.39	4.77	25.9	12.1
Total Aromatics >EC12-EC44	<0.1 mg/kg	TM173		135	48.3	91.3	58.9	191	101
Total Aliphatics & Aromatics >C5-C44	<0.1 mg/kg	TM173		388	97.9	223	141	612	269

Validated

CERTIFICATE OF ANALYSIS

SDG:	180118-49	**Client Reference:**		**Report Number:**	448302
Location:	Llanwern	**Order Number:**	LLA388	**Superseded Report:**	442943

TPH CWG (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	W134-01	W134-02	W134-03	W134-04	W134-05	W134-06
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	17/01/2018	17/01/2018	17/01/2018	17/01/2018	17/01/2018	17/01/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	18/01/2018	18/01/2018	18/01/2018	18/01/2018	18/01/2018	18/01/2018
			SDG Ref	180118-49	180118-49	180118-49	180118-49	180118-49	180118-49
			Lab Sample No.(s)	16889580	16889590	16889597	16889602	16889610	16889615
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		37	44	35	45	39	25
GRO TOT (Moisture Corrected)	<0.044 mg/kg	TM089		0.994 M	<0.176 M	1.31 M	0.263 M	0.408 M	<0.176 M
Methyl tertiary butyl ether (MTBE)	<0.005 mg/kg	TM089		<0.02 #	<0.02 #	<0.02 #	<0.02 #	<0.02 #	<0.02 #
Benzene	<0.01 mg/kg	TM089		<0.04 M	<0.04 M	<0.04 M	<0.04 M	<0.04 M	<0.04 M
Toluene	<0.002 mg/kg	TM089		0.0656 M	0.0293 M	0.0548 M	0.0195 M	0.0205 M	0.0357 M
Ethylbenzene	<0.003 mg/kg	TM089		<0.012 M	<0.012 M	<0.012 M	<0.012 M	<0.012 M	<0.012 M
m,p-Xylene	<0.006 mg/kg	TM089		0.0564 M	0.0304 M	0.0548 M	<0.024 M	<0.024 M	0.0345 M
o-Xylene	<0.003 mg/kg	TM089		0.0138 M	<0.012 M	0.0151 M	<0.012 M	<0.012 M	<0.012 M
sum of detected mpo xylene by GC	<0.009 mg/kg	TM089		0.0702	0.0304	0.0699	<0.009	<0.009	0.0345
sum of detected BTEX by GC	<0.024 mg/kg	TM089		0.136	0.0597	0.125	<0.024	<0.024	0.0702
Aliphatics >C5-C6	<0.01 mg/kg	TM089		0.0483	<0.04	<0.04	<0.04	<0.04	<0.04
Aliphatics >C6-C8	<0.01 mg/kg	TM089		0.202	<0.04	0.136	<0.04	0.0479	<0.04
Aliphatics >C8-C10	<0.01 mg/kg	TM089		0.12	<0.04	0.099	<0.04	<0.04	<0.04
Aliphatics >C10-C12	<0.01 mg/kg	TM089		0.216	<0.04	0.49	0.0812	0.135	<0.04
Aliphatics >C12-C16	<0.1 mg/kg	TM173		1.67	1.05	5.3	7.08	5.27	1.76
Aliphatics >C16-C21	<0.1 mg/kg	TM173		21	8.5	42	45.1	28.6	18.5
Aliphatics >C21-C35	<0.1 mg/kg	TM173		34.9	16	69.3	79.8	62.9	30.5
Aliphatics >C35-C44	<0.1 mg/kg	TM173		5.96	1.9	19.2	18.6	19.2	6.6
Total Aliphatics >C12-C44	<0.1 mg/kg	TM173		63.6	27.4	136	151	116	57.4
Aromatics >EC5-EC7	<0.01 mg/kg	TM089		0.0426	<0.04	0.0408	<0.04	<0.04	<0.04
Aromatics >EC7-EC8	<0.01 mg/kg	TM089		0.0656	<0.04	0.0548	<0.04	<0.04	<0.04
Aromatics >EC8-EC10	<0.01 mg/kg	TM089		0.154	0.0445	0.14	0.0412	0.0513	0.0472
Aromatics >EC10-EC12	<0.01 mg/kg	TM089		0.144	<0.04	0.326	0.0542	0.0901	<0.04
Aromatics >EC12-EC16	<0.1 mg/kg	TM173		13.4	8.5	15.5	20.9	14	7.22
Aromatics >EC16-EC21	<0.1 mg/kg	TM173		95.9	52.5	125	172	98.7	46.5
Aromatics >EC21-EC35	<0.1 mg/kg	TM173		252	122	334	478	261	112
Aromatics >EC35-EC44	<0.1 mg/kg	TM173		80.6	28.5	105	133	88.3	34.6
Aromatics >EC40-EC44	<0.1 mg/kg	TM173		27.2	8.18	35.8	42.7	31	12.2
Total Aromatics >EC12-EC44	<0.1 mg/kg	TM173		442	211	579	803	462	201
Total Aliphatics & Aromatics >C5-C44	<0.1 mg/kg	TM173		506	239	716	954	578	258

CERTIFICATE OF ANALYSIS

SDG:	180118-49	**Client Reference:**		**Report Number:**	448302
Location:	Llanwern	**Order Number:**	LLA388	**Superseded Report:**	442943

TPH CWG (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	W134-07	W134-08	W134-09			
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00			
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)			
			Date Sampled	17/01/2018	17/01/2018	17/01/2018			
			Sample Time	00:00	00:00	00:00			
			Date Received	18/01/2018	18/01/2018	18/01/2018			
			SDG Ref	180118-49	180118-49	180118-49			
			Lab Sample No.(s)	16889621	16889626	16889631			
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		27	39	33			
GRO TOT (Moisture Corrected)	<0.044 mg/kg	TM089		<0.176 M	0.652 M	<0.176 M			
Methyl tertiary butyl ether (MTBE)	<0.005 mg/kg	TM089		<0.02 #	<0.02 #	<0.02 #			
Benzene	<0.01 mg/kg	TM089		<0.04 M	<0.04 M	<0.04 M			
Toluene	<0.002 mg/kg	TM089		0.0186 M	0.0381 M	0.0283 M			
Ethylbenzene	<0.003 mg/kg	TM089		<0.012 M	<0.012 M	<0.012 M			
m,p-Xylene	<0.006 mg/kg	TM089		<0.024 M	0.0393 M	<0.024 M			
o-Xylene	<0.003 mg/kg	TM089		<0.012 M	<0.012 M	<0.012 M			
sum of detected mpo xylene by GC	<0.009 mg/kg	TM089		<0.009	0.0393	<0.009			
sum of detected BTEX by GC	<0.024 mg/kg	TM089		<0.024	0.0774	0.0283			
Aliphatics >C5-C6	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04			
Aliphatics >C6-C8	<0.01 mg/kg	TM089		<0.04	0.108	<0.04			
Aliphatics >C8-C10	<0.01 mg/kg	TM089		<0.04	0.0845	<0.04			
Aliphatics >C10-C12	<0.01 mg/kg	TM089		<0.04	0.162	<0.04			
Aliphatics >C12-C16	<0.1 mg/kg	TM173		5.4	3.49	5.92			
Aliphatics >C16-C21	<0.1 mg/kg	TM173		37.3	23.4	34.8			
Aliphatics >C21-C35	<0.1 mg/kg	TM173		118	38.5	181			
Aliphatics >C35-C44	<0.1 mg/kg	TM173		76.5	10.6	225			
Total Aliphatics >C12-C44	<0.1 mg/kg	TM173		238	76	447			
Aromatics >EC5-EC7	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04			
Aromatics >EC7-EC8	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04			
Aromatics >EC8-EC10	<0.01 mg/kg	TM089		<0.04	0.108	<0.04			
Aromatics >EC10-EC12	<0.01 mg/kg	TM089		<0.04	0.107	<0.04			
Aromatics >EC12-EC16	<0.1 mg/kg	TM173		11.1	10.1	11.3			
Aromatics >EC16-EC21	<0.1 mg/kg	TM173		77	82.3	84			
Aromatics >EC21-EC35	<0.1 mg/kg	TM173		259	204	385			
Aromatics >EC35-EC44	<0.1 mg/kg	TM173		116	56.2	345			
Aromatics >EC40-EC44	<0.1 mg/kg	TM173		43.2	17.6	155			
Total Aromatics >EC12-EC44	<0.1 mg/kg	TM173		463	353	825			
Total Aliphatics & Aromatics >C5-C44	<0.1 mg/kg	TM173		700	429	1270			

CERTIFICATE OF ANALYSIS

SDG:	180118-49	**Client Reference:**		**Report Number:**	448302
Location:	Llanwern	**Order Number:**	LLA388	**Superseded Report:**	442943

Asbestos Identification - Solid Samples

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthophyllite	Fibrous Tremolite	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	W83-01 0.00 - 0.00 SOLID 17/01/2018 00:00:00 01/03/2018 09:51:54 180118-49 16889538 TM048	08/03/2018	Barbara Urbanek-Walsh	Fibre bundles in soil.	Not Detected (#)	Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	W83-03 0.00 - 0.00 SOLID 17/01/2018 00:00:00 01/03/2018 10:05:21 180118-49 16889548 TM048	08/03/2018	Marcin Magdziarek	Bundles of fibre in soil	Detected (#)	Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	W83-05 0.00 - 0.00 SOLID 17/01/2018 00:00:00 01/03/2018 10:01:26 180118-49 16889559 TM048	07/03/2018	Andrzej Ferfecki	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	W83-07 0.00 - 0.00 SOLID 17/01/2018 00:00:00 01/03/2018 09:57:41 180118-49 16889568 TM048	08/03/2018	Marcin Magdziarek	Loose fibres in soil	Not Detected (#)	Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	W83-09 0.00 - 0.00 SOLID 17/01/2018 00:00:00 01/03/2018 09:51:40 180118-49 16889576 TM048	07/03/2018	Barbara Urbanek-Walsh	Fibre bundles in soil.	Not Detected (#)	Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	W84-01 0.00 - 0.00 SOLID 17/01/2018 00:00:00 01/03/2018 10:00:23 180118-49 16889531 TM048	08/03/2018	Barbara Urbanek-Walsh	Loose fibres in soil.	Not Detected (#)	Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Detected

Validated

CERTIFICATE OF ANALYSIS

SDG: 180118-49 **Client Reference:** **Report Number:** 448302
Location: Llanwern **Order Number:** LLA388 **Superseded Report:** 442943

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthophyllite	Fibrous Tremolite	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	W84-03 0.00 - 0.00 SOLID 17/01/2018 00:00:00 01/03/2018 10:11:17 180118-49 16889637 TM048	08/03/2018	Renata Bozhkov	Loose fibres in soil	Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	W84-05 0.00 - 0.00 SOLID 17/01/2018 00:00:00 01/03/2018 10:08:56 180118-49 16889648 TM048	08/03/2018	Renata Bozhkov	Loose fibres in soil	Not Detected (#)	Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	W84-07 0.00 - 0.00 SOLID 17/01/2018 00:00:00 01/03/2018 10:06:44 180118-49 16889656 TM048	08/03/2018	Renata Bozhkov	Loose fibres in soil	Not Detected (#)	Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	W84-09 0.00 - 0.00 SOLID 17/01/2018 00:00:00 01/03/2018 10:04:13 180118-49 16889669 TM048	08/03/2018	Marcin Magdziarek	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	W134-01 0.00 - 0.00 SOLID 17/01/2018 00:00:00 01/03/2018 09:58:17 180118-49 16889580 TM048	06/03/2018	Christian Hallam	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	W134-03 0.00 - 0.00 SOLID 17/01/2018 00:00:00 01/03/2018 10:16:48 180118-49 16889597 TM048	08/03/2018	Marcin Magdziarek	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected

Validated

CERTIFICATE OF ANALYSIS

SDG: 180118-49 **Client Reference:** **Report Number:** 448302
Location: Llanwern **Order Number:** LLA388 **Superseded Report:** 442943

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthophyllite	Fibrous Tremolite	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	W134-05 0.00 - 0.00 SOLID 17/01/2018 00:00:00 01/03/2018 09:54:22 180118-49 16889610 TM048	08/03/2018	Renata Bozhkov	Loose fibres in soil	Not Detected (#)	Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	W134-07 0.00 - 0.00 SOLID 17/01/2018 00:00:00 01/03/2018 10:12:43 180118-49 16889621 TM048	07/03/2018	Barbara Urbanek-Walsh	Fibre bundles i soil.	Detected (#)	Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	W134-09 0.00 - 0.00 SOLID 17/01/2018 00:00:00 01/03/2018 10:09:13 180118-49 16889631 TM048	08/03/2018	Barbara Urbanek-Walsh	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected

CERTIFICATE OF ANALYSIS

SDG:	180118-49	**Client Reference:**		**Report Number:**	448302
Location:	Llanwern	**Order Number:**	LLA388	**Superseded Report:**	442943

Asbestos Quantification - Full

		Additional Asbestos Components (Using TM048)	Analysts Comments	Asbestos Quantification - Gravimetric - %	Asbestos Quantification - PCOM Evaluation - %	Asbestos Quantification - Total - %
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	W83-01 0.00 - 0.00 SOLID 17/01/2018 00:00:00 01/03/2018 09:53:02 180118-49 16889538 TM304	None (#)	N/C	<0.001 (#)	<0.001 (#)	<0.001 (#)
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	W83-03 0.00 - 0.00 SOLID 17/01/2018 00:00:00 01/03/2018 10:06:36 180118-49 16889548 TM304	None (#)	N/A	0.0011 (#)	<0.001 (#)	0.0011 (#)
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	W83-07 0.00 - 0.00 SOLID 17/01/2018 00:00:00 01/03/2018 09:59:18 180118-49 16889568 TM304	None (#)	N/A	<0.001 (#)	<0.001 (#)	<0.001 (#)
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	W83-09 0.00 - 0.00 SOLID 17/01/2018 00:00:00 01/03/2018 09:55:27 180118-49 16889576 TM304	None (#)	N/A	0.0088 (#)	<0.001 (#)	0.0088 (#)
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	W84-01 0.00 - 0.00 SOLID 17/01/2018 00:00:00 01/03/2018 10:01:23 180118-49 16889531 TM304	None (#)	N/A	<0.001 (#)	<0.001 (#)	<0.001 (#)
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	W84-03 0.00 - 0.00 SOLID 17/01/2018 00:00:00 01/03/2018 10:12:37 180118-49 16889637 TM304	None (#)	N/C	<0.001 (#)	<0.001 (#)	<0.001 (#)

CERTIFICATE OF ANALYSIS

SDG:	180118-49	**Client Reference:**		**Report Number:**	448302
Location:	Llanwern	**Order Number:**	LLA388	**Superseded Report:**	442943

		Additional Asbestos Components (Using TM048)	Analysts Comments	Asbestos Quantification - Gravimetric - %	Asbestos Quantification - PCOM Evaluation - %	Asbestos Quantification - Total - %
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	W84-05 0.00 - 0.00 SOLID 17/01/2018 00:00:00 01/03/2018 10:09:55 180118-49 16889648 TM304	None (#)	N/A	<0.001 (#)	<0.001 (#)	<0.001 (#)
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	W84-07 0.00 - 0.00 SOLID 17/01/2018 00:00:00 01/03/2018 10:07:34 180118-49 16889656 TM304	None (#)	N/C	<0.001 (#)	<0.001 (#)	<0.001 (#)
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	W134-05 0.00 - 0.00 SOLID 17/01/2018 00:00:00 01/03/2018 09:55:33 180118-49 16889610 TM304	None (#)	N/C	<0.001 (#)	<0.001 (#)	<0.001 (#)
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	W134-07 0.00 - 0.00 SOLID 17/01/2018 00:00:00 01/03/2018 10:14:15 180118-49 16889621 TM304	None (#)	N/A	<0.001 (#)	<0.001 (#)	<0.001 (#)

CERTIFICATE OF ANALYSIS

SDG:	180118-49	**Client Reference:**		**Report Number:**	448302
Location:	Llanwern	**Order Number:**	LLA388	**Superseded Report:**	442943

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.105	**Natural Moisture Content (%)**	17.2
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	85.4
Particle Size <4mm	>95%		

Case	
SDG	180118-49
Lab Sample Number(s)	16889531
Sampled Date	17-Jan-2018
Customer Sample Ref.	W84-01
Depth (m)	0.00 - 0.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Naphthalene (diss.filt)	0.0000164	<0.00001	0.000164	<0.0001	-	-	-
Total Ammonia as NH3	<0.2	<0.2	<2	<2	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Acenaphthene (diss.filt)	0.00001	<0.000005	0.0001	<0.00005	-	-	-
Arsenic	0.00292	<0.0005	0.0292	<0.005	-	-	-
Acenaphthylene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene (diss.filt)	0.0000953	<0.000005	0.000953	<0.00005	-	-	-
Anthracene (diss.filt)	0.0000194	<0.000005	0.000194	<0.00005	-	-	-
Iron	0.0259	<0.019	0.259	<0.19	-	-	-
Phenanthrene (diss.filt)	0.000109	<0.000005	0.00109	<0.00005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Fluorene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene (diss.filt)	0.0000605	<0.000005	0.000605	<0.00005	-	-	-
Benzo(a)anthracene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Benzo(b)fluoranthene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene (diss.filt)	0.00000411	<0.000002	0.0000411	<0.00002	-	-	-
Copper	0.00082	<0.0003	0.0082	<0.003	-	-	-
Dibenzo(a,h)anthracene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Lead	0.000797	<0.0002	0.00797	<0.002	-	-	-
Benzo(g,h,i)perylene (diss.filt)	0.0000168	<0.000005	0.000168	<0.00005	-	-	-
Indeno(1,2,3-cd)pyrene (diss.filt)	0.00000729	<0.000005	0.0000729	<0.00005	-	-	-

Leach Test Information

Date Prepared	20-Jan-2018
pH (pH Units)	9.29
Conductivity (µS/cm)	109.00
Temperature (°C)	20.10
Volume Leachant (Litres)	0.885

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180118-49	**Client Reference:**		**Report Number:**	448302
Location:	Llanwern	**Order Number:**	LLA388	**Superseded Report:**	442943

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.105	**Natural Moisture Content (%)**	17.2
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	85.4
Particle Size <4mm	>95%		

Case	
SDG	180118-49
Lab Sample Number(s)	16889531
Sampled Date	17-Jan-2018
Customer Sample Ref.	W84-01
Depth (m)	0.00 - 0.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Manganese	0.00326	<0.001	0.0326	<0.01	-	-	-
PAH 16 EPA Total by GCMS (diss.filt)	0.000338	<0.000082	0.00338	<0.00082	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	0.00199	<0.0005	0.0199	<0.005	-	-	-
Vanadium	0.06	<0.001	0.6	<0.01	-	-	-
Zinc	0.00131	<0.001	0.0131	<0.01	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
VOC MS (W)							
Benzene	<0.001	<0.001	<0.01	<0.01	-	-	-
Toluene	<0.001	<0.001	<0.01	<0.01	-	-	-
Ethylbenzene	<0.001	<0.001	<0.01	<0.01	-	-	-
p/m-Xylene	<0.001	<0.001	<0.01	<0.01	-	-	-
o-Xylene	<0.001	<0.001	<0.01	<0.01	-	-	-
Total Xylenes	<0.002	<0.002	<0.02	<0.02	-	-	-

Leach Test Information

Date Prepared	20-Jan-2018
pH (pH Units)	9.29
Conductivity (µS/cm)	109.00
Temperature (°C)	20.10
Volume Leachant (Litres)	0.885

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180118-49	**Client Reference:**		**Report Number:**	448302
Location:	Llanwern	**Order Number:**	LLA388	**Superseded Report:**	442943

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.103	**Natural Moisture Content (%)**	14.9
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	87
Particle Size <4mm	>95%		

Case	
SDG	180118-49
Lab Sample Number(s)	16889538
Sampled Date	17-Jan-2018
Customer Sample Ref.	W83-01
Depth (m)	0.00 - 0.00

Eluate Analysis	**C_2** Concⁿ in 10:1 eluate (mg/l)		**A_2** 10:1 concⁿ leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Naphthalene (diss.filt)	0.000044	<0.00001	0.00044	<0.0001	-	-	-
Total Ammonia as NH3	<0.2	<0.2	<2	<2	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Acenaphthene (diss.filt)	0.0000313	<0.000005	0.000313	<0.00005	-	-	-
Arsenic	0.00442	<0.0005	0.0442	<0.005	-	-	-
Acenaphthylene (diss.filt)	0.0000065	<0.000005	0.000065	<0.00005	-	-	-
Fluoranthene (diss.filt)	0.000285	<0.000005	0.00285	<0.00005	-	-	-
Anthracene (diss.filt)	0.0000118	<0.000005	0.000118	<0.00005	-	-	-
Iron	0.0231	<0.019	0.231	<0.19	-	-	-
Phenanthrene (diss.filt)	0.0000713	<0.000005	0.000713	<0.00005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Fluorene (diss.filt)	0.0000137	<0.000005	0.000137	<0.00005	-	-	-
Chrysene (diss.filt)	0.0000674	<0.000005	0.000674	<0.00005	-	-	-
Pyrene (diss.filt)	0.000227	<0.000005	0.00227	<0.00005	-	-	-
Benzo(a)anthracene (diss.filt)	0.0000372	<0.000005	0.000372	<0.00005	-	-	-
Chromium	0.00212	<0.001	0.0212	<0.01	-	-	-
Benzo(b)fluoranthene (diss.filt)	0.0000496	<0.000005	0.000496	<0.00005	-	-	-
Benzo(k)fluoranthene (diss.filt)	0.0000327	<0.000005	0.000327	<0.00005	-	-	-
Benzo(a)pyrene (diss.filt)	0.0000125	<0.000002	0.000125	<0.00002	-	-	-
Copper	0.00408	<0.0003	0.0408	<0.003	-	-	-
Dibenzo(a,h)anthracene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Benzo(g,h,i)perylene (diss.filt)	0.0000223	<0.000005	0.000223	<0.00005	-	-	-
Indeno(1,2,3-cd)pyrene (diss.filt)	0.0000136	<0.000005	0.000136	<0.00005	-	-	-

Leach Test Information

Date Prepared	22-Jan-2018
pH (pH Units)	10.03
Conductivity (µS/cm)	191.00
Temperature (°C)	20.00
Volume Leachant (Litres)	0.887

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180118-49	**Client Reference:**		**Report Number:**	448302
Location:	Llanwern	**Order Number:**	LLA388	**Superseded Report:**	442943

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.103	**Natural Moisture Content (%)**	14.9
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	87
Particle Size <4mm	>95%		

Case	
SDG	180118-49
Lab Sample Number(s)	16889538
Sampled Date	17-Jan-2018
Customer Sample Ref.	W83-01
Depth (m)	0.00 - 0.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Manganese	0.00199	<0.001	0.0199	<0.01	-	-	-
PAH 16 EPA Total by GCMS (diss.filt)	0.000926	<0.000082	0.00926	<0.00082	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	0.00261	<0.0005	0.0261	<0.005	-	-	-
Vanadium	0.108	<0.001	1.08	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
VOC MS (W)							
Benzene	<0.001	<0.001	<0.01	<0.01	-	-	-
Toluene	<0.001	<0.001	<0.01	<0.01	-	-	-
Ethylbenzene	<0.001	<0.001	<0.01	<0.01	-	-	-
p/m-Xylene	<0.001	<0.001	<0.01	<0.01	-	-	-
o-Xylene	<0.001	<0.001	<0.01	<0.01	-	-	-
Total Xylenes	<0.002	<0.002	<0.02	<0.02	-	-	-

Leach Test Information

Date Prepared	22-Jan-2018
pH (pH Units)	10.03
Conductivity (µS/cm)	191.00
Temperature (°C)	20.00
Volume Leachant (Litres)	0.887

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180118-49	**Client Reference:**		**Report Number:**	448302
Location:	Llanwern	**Order Number:**	LLA388	**Superseded Report:**	442943

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.107	**Natural Moisture Content (%)**	18.9
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	84.1
Particle Size <4mm	>95%		

Case	
SDG	180118-49
Lab Sample Number(s)	16889542
Sampled Date	17-Jan-2018
Customer Sample Ref.	W83-02
Depth (m)	0.00 - 0.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Naphthalene (diss.filt)	0.0000138	<0.00001	0.000138	<0.0001	-	-	-
Total Ammonia as NH3	<0.2	<0.2	<2	<2	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Acenaphthene (diss.filt)	0.00000753	<0.000005	0.0000753	<0.00005	-	-	-
Arsenic	0.00284	<0.0005	0.0284	<0.005	-	-	-
Acenaphthylene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene (diss.filt)	0.0000259	<0.000005	0.000259	<0.00005	-	-	-
Anthracene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Iron	0.0243	<0.019	0.243	<0.19	-	-	-
Phenanthrene (diss.filt)	0.000021	<0.000005	0.00021	<0.00005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Fluorene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene (diss.filt)	0.0000119	<0.000005	0.000119	<0.00005	-	-	-
Pyrene (diss.filt)	0.0000336	<0.000005	0.000336	<0.00005	-	-	-
Benzo(a)anthracene (diss.filt)	0.0000159	<0.000005	0.000159	<0.00005	-	-	-
Chromium	0.00134	<0.001	0.0134	<0.01	-	-	-
Benzo(b)fluoranthene (diss.filt)	0.00000904	<0.000005	0.0000904	<0.00005	-	-	-
Benzo(k)fluoranthene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene (diss.filt)	0.0000036	<0.000002	0.000036	<0.00002	-	-	-
Copper	<0.0003	<0.0003	<0.003	<0.003	-	-	-
Dibenzo(a,h)anthracene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Benzo(g,h,i)perylene (diss.filt)	0.00000901	<0.000005	0.0000901	<0.00005	-	-	-
Indeno(1,2,3-cd)pyrene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-

Leach Test Information

Date Prepared	22-Jan-2018
pH (pH Units)	9.65
Conductivity (µS/cm)	149.00
Temperature (°C)	20.10
Volume Leachant (Litres)	0.883

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180118-49	**Client Reference:**		**Report Number:**	448302
Location:	Llanwern	**Order Number:**	LLA388	**Superseded Report:**	442943

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.107	**Natural Moisture Content (%)**	18.9
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	84.1
Particle Size <4mm	>95%		

Case	
SDG	180118-49
Lab Sample Number(s)	16889542
Sampled Date	17-Jan-2018
Customer Sample Ref.	W83-02
Depth (m)	0.00 - 0.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Manganese	0.0022	<0.001	0.022	<0.01	-	-	-
PAH 16 EPA Total by GCMS (diss.filt)	0.000151	<0.000082	0.00151	<0.00082	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	0.00305	<0.0005	0.0305	<0.005	-	-	-
Vanadium	0.0816	<0.001	0.816	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
VOC MS (W)							
Benzene	<0.001	<0.001	<0.01	<0.01	-	-	-
Toluene	<0.001	<0.001	<0.01	<0.01	-	-	-
Ethylbenzene	<0.001	<0.001	<0.01	<0.01	-	-	-
p/m-Xylene	<0.001	<0.001	<0.01	<0.01	-	-	-
o-Xylene	<0.001	<0.001	<0.01	<0.01	-	-	-
Total Xylenes	<0.002	<0.002	<0.02	<0.02	-	-	-

Leach Test Information

Date Prepared	22-Jan-2018
pH (pH Units)	9.65
Conductivity (µS/cm)	149.00
Temperature (°C)	20.10
Volume Leachant (Litres)	0.883

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180118-49	**Client Reference:**		**Report Number:**	448302
Location:	Llanwern	**Order Number:**	LLA388	**Superseded Report:**	442943

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.108	**Natural Moisture Content (%)**	19.6
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	83.6
Particle Size <4mm	>95%		

Case	
SDG	180118-49
Lab Sample Number(s)	16889548
Sampled Date	17-Jan-2018
Customer Sample Ref.	W83-03
Depth (m)	0.00 - 0.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Naphthalene (diss.filt)	0.0000152	<0.00001	0.000152	<0.0001	-	-	-
Total Ammonia as NH3	<0.2	<0.2	<2	<2	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Acenaphthene (diss.filt)	0.00000927	<0.000005	0.0000927	<0.00005	-	-	-
Arsenic	0.00332	<0.0005	0.0332	<0.005	-	-	-
Acenaphthylene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene (diss.filt)	0.0000335	<0.000005	0.000335	<0.00005	-	-	-
Anthracene (diss.filt)	0.00000675	<0.000005	0.0000675	<0.00005	-	-	-
Iron	0.0336	<0.019	0.336	<0.19	-	-	-
Phenanthrene (diss.filt)	0.0000475	<0.000005	0.000475	<0.00005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Fluorene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene (diss.filt)	0.0000192	<0.000005	0.000192	<0.00005	-	-	-
Pyrene (diss.filt)	0.0000374	<0.000005	0.000374	<0.00005	-	-	-
Benzo(a)anthracene (diss.filt)	0.0000208	<0.000005	0.000208	<0.00005	-	-	-
Chromium	0.00179	<0.001	0.0179	<0.01	-	-	-
Benzo(b)fluoranthene (diss.filt)	0.000019	<0.000005	0.00019	<0.00005	-	-	-
Benzo(k)fluoranthene (diss.filt)	0.00000801	<0.000005	0.0000801	<0.00005	-	-	-
Benzo(a)pyrene (diss.filt)	0.00000697	<0.000002	0.0000697	<0.00002	-	-	-
Copper	0.000919	<0.0003	0.00919	<0.003	-	-	-
Dibenzo(a,h)anthracene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Lead	0.000274	<0.0002	0.00274	<0.002	-	-	-
Benzo(g,h,i)perylene (diss.filt)	0.0000182	<0.000005	0.000182	<0.00005	-	-	-
Indeno(1,2,3-cd)pyrene (diss.filt)	0.00000716	<0.000005	0.0000716	<0.00005	-	-	-

Leach Test Information

Date Prepared	22-Jan-2018
pH (pH Units)	9.71
Conductivity (µS/cm)	157.00
Temperature (°C)	19.90
Volume Leachant (Litres)	0.882

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180118-49	**Client Reference:**		**Report Number:**	448302
Location:	Llanwern	**Order Number:**	LLA388	**Superseded Report:**	442943

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.108	**Natural Moisture Content (%)**	19.6
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	83.6
Particle Size <4mm	>95%		

Case	
SDG	180118-49
Lab Sample Number(s)	16889548
Sampled Date	17-Jan-2018
Customer Sample Ref.	W83-03
Depth (m)	0.00 - 0.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Manganese	0.00254	<0.001	0.0254	<0.01	-	-	-
PAH 16 EPA Total by GCMS (diss.filt)	0.000249	<0.000082	0.00249	<0.00082	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	0.00314	<0.0005	0.0314	<0.005	-	-	-
Vanadium	0.0866	<0.001	0.866	<0.01	-	-	-
Zinc	0.00155	<0.001	0.0155	<0.01	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
VOC MS (W)							
Benzene	<0.001	<0.001	<0.01	<0.01	-	-	-
Toluene	<0.001	<0.001	<0.01	<0.01	-	-	-
Ethylbenzene	<0.001	<0.001	<0.01	<0.01	-	-	-
p/m-Xylene	<0.001	<0.001	<0.01	<0.01	-	-	-
o-Xylene	<0.001	<0.001	<0.01	<0.01	-	-	-
Total Xylenes	<0.002	<0.002	<0.02	<0.02	-	-	-

Leach Test Information

Date Prepared	22-Jan-2018
pH (pH Units)	9.71
Conductivity (µS/cm)	157.00
Temperature (°C)	19.90
Volume Leachant (Litres)	0.882

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180118-49	**Client Reference:**		**Report Number:**	448302
Location:	Llanwern	**Order Number:**	LLA388	**Superseded Report:**	442943

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.114	**Natural Moisture Content (%)**	26.9
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	78.8
Particle Size <4mm	>95%		

Case	
SDG	180118-49
Lab Sample Number(s)	16889554
Sampled Date	17-Jan-2018
Customer Sample Ref.	W83-04
Depth (m)	0.00 - 0.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Naphthalene (diss.filt)	0.0000106	<0.00001	0.000106	<0.0001	-	-	-
Total Ammonia as NH3	<0.2	<0.2	<2	<2	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Acenaphthene (diss.filt)	0.00000593	<0.000005	0.0000593	<0.00005	-	-	-
Arsenic	0.00388	<0.0005	0.0388	<0.005	-	-	-
Acenaphthylene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene (diss.filt)	0.000059	<0.000005	0.00059	<0.00005	-	-	-
Anthracene (diss.filt)	0.0000156	<0.000005	0.000156	<0.00005	-	-	-
Iron	0.0242	<0.019	0.242	<0.19	-	-	-
Phenanthrene (diss.filt)	0.0000941	<0.000005	0.000941	<0.00005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Fluorene (diss.filt)	0.00000897	<0.000005	0.0000897	<0.00005	-	-	-
Chrysene (diss.filt)	0.0000241	<0.000005	0.000241	<0.00005	-	-	-
Pyrene (diss.filt)	0.0000895	<0.000005	0.000895	<0.00005	-	-	-
Benzo(a)anthracene (diss.filt)	0.0000193	<0.000005	0.000193	<0.00005	-	-	-
Chromium	0.00212	<0.001	0.0212	<0.01	-	-	-
Benzo(b)fluoranthene (diss.filt)	0.0000234	<0.000005	0.000234	<0.00005	-	-	-
Benzo(k)fluoranthene (diss.filt)	0.0000124	<0.000005	0.000124	<0.00005	-	-	-
Benzo(a)pyrene (diss.filt)	0.0000065	<0.000002	0.000065	<0.00002	-	-	-
Copper	0.00163	<0.0003	0.0163	<0.003	-	-	-
Dibenzo(a,h)anthracene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Lead	0.000316	<0.0002	0.00316	<0.002	-	-	-
Benzo(g,h,i)perylene (diss.filt)	0.0000178	<0.000005	0.000178	<0.00005	-	-	-
Indeno(1,2,3-cd)pyrene (diss.filt)	0.00000882	<0.000005	0.0000882	<0.00005	-	-	-

Leach Test Information

Date Prepared	20-Jan-2018
pH (pH Units)	9.55
Conductivity (µS/cm)	175.00
Temperature (°C)	19.80
Volume Leachant (Litres)	0.876

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180118-49	**Client Reference:**		**Report Number:**	448302
Location:	Llanwern	**Order Number:**	LLA388	**Superseded Report:**	442943

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.114	**Natural Moisture Content (%)**	26.9
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	78.8
Particle Size <4mm	>95%		

Case	
SDG	180118-49
Lab Sample Number(s)	16889554
Sampled Date	17-Jan-2018
Customer Sample Ref.	W83-04
Depth (m)	0.00 - 0.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Manganese	0.00541	<0.001	0.0541	<0.01	-	-	-
PAH 16 EPA Total by GCMS (diss.filt)	0.000396	<0.000082	0.00396	<0.00082	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	0.00294	<0.0005	0.0294	<0.005	-	-	-
Vanadium	0.0731	<0.001	0.731	<0.01	-	-	-
Zinc	0.00104	<0.001	0.0104	<0.01	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
VOC MS (W)							
Benzene	<0.001	<0.001	<0.01	<0.01	-	-	-
Toluene	<0.001	<0.001	<0.01	<0.01	-	-	-
Ethylbenzene	<0.001	<0.001	<0.01	<0.01	-	-	-
p/m-Xylene	<0.001	<0.001	<0.01	<0.01	-	-	-
o-Xylene	<0.001	<0.001	<0.01	<0.01	-	-	-
Total Xylenes	<0.002	<0.002	<0.02	<0.02	-	-	-

Leach Test Information

Date Prepared	20-Jan-2018
pH (pH Units)	9.55
Conductivity (µS/cm)	175.00
Temperature (°C)	19.80
Volume Leachant (Litres)	0.876

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180118-49	**Client Reference:**		**Report Number:**	448302
Location:	Llanwern	**Order Number:**	LLA388	**Superseded Report:**	442943

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.113	**Natural Moisture Content (%)**	25
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	80
Particle Size <4mm	>95%		

Case	
SDG	180118-49
Lab Sample Number(s)	16889559
Sampled Date	17-Jan-2018
Customer Sample Ref.	W83-05
Depth (m)	0.00 - 0.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Naphthalene (diss.filt)	0.0000108	<0.00001	0.000108	<0.0001	-	-	-
Total Ammonia as NH3	<0.2	<0.2	<2	<2	-	-	-
Total Cyanide (W)	0.066	<0.05	0.66	<0.5	-	-	-
Acenaphthene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Arsenic	0.00449	<0.0005	0.0449	<0.005	-	-	-
Acenaphthylene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene (diss.filt)	0.0000804	<0.000005	0.000804	<0.00005	-	-	-
Anthracene (diss.filt)	0.0000172	<0.000005	0.000172	<0.00005	-	-	-
Iron	0.0703	<0.019	0.703	<0.19	-	-	-
Phenanthrene (diss.filt)	0.000102	<0.000005	0.00102	<0.00005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Fluorene (diss.filt)	0.0000112	<0.000005	0.000112	<0.00005	-	-	-
Chrysene (diss.filt)	0.0000201	<0.000005	0.000201	<0.00005	-	-	-
Pyrene (diss.filt)	0.000109	<0.000005	0.00109	<0.00005	-	-	-
Benzo(a)anthracene (diss.filt)	0.000019	<0.000005	0.00019	<0.00005	-	-	-
Chromium	0.00163	<0.001	0.0163	<0.01	-	-	-
Benzo(b)fluoranthene (diss.filt)	0.0000199	<0.000005	0.000199	<0.00005	-	-	-
Benzo(k)fluoranthene (diss.filt)	0.0000115	<0.000005	0.000115	<0.00005	-	-	-
Benzo(a)pyrene (diss.filt)	0.0000093	<0.000002	0.000093	<0.00002	-	-	-
Copper	0.00196	<0.0003	0.0196	<0.003	-	-	-
Dibenzo(a,h)anthracene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Lead	0.00118	<0.0002	0.0118	<0.002	-	-	-
Benzo(g,h,i)perylene (diss.filt)	0.0000227	<0.000005	0.000227	<0.00005	-	-	-
Indeno(1,2,3-cd)pyrene (diss.filt)	0.0000102	<0.000005	0.000102	<0.00005	-	-	-

Leach Test Information

Date Prepared	22-Jan-2018
pH (pH Units)	8.39
Conductivity (µS/cm)	114.00
Temperature (°C)	19.80
Volume Leachant (Litres)	0.878

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180118-49	**Client Reference:**		**Report Number:**	448302
Location:	Llanwern	**Order Number:**	LLA388	**Superseded Report:**	442943

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.113	**Natural Moisture Content (%)**	25
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	80
Particle Size <4mm	>95%		

Case	
SDG	180118-49
Lab Sample Number(s)	16889559
Sampled Date	17-Jan-2018
Customer Sample Ref.	W83-05
Depth (m)	0.00 - 0.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Manganese	0.00418	<0.001	0.0418	<0.01	-	-	-
PAH 16 EPA Total by GCMS (diss.filt)	0.000443	<0.000082	0.00443	<0.00082	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	0.00227	<0.0005	0.0227	<0.005	-	-	-
Vanadium	0.0481	<0.001	0.481	<0.01	-	-	-
Zinc	0.00248	<0.001	0.0248	<0.01	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
VOC MS (W)							
Benzene	<0.001	<0.001	<0.01	<0.01	-	-	-
Toluene	<0.001	<0.001	<0.01	<0.01	-	-	-
Ethylbenzene	<0.001	<0.001	<0.01	<0.01	-	-	-
p/m-Xylene	<0.001	<0.001	<0.01	<0.01	-	-	-
o-Xylene	<0.001	<0.001	<0.01	<0.01	-	-	-
Total Xylenes	<0.002	<0.002	<0.02	<0.02	-	-	-

Leach Test Information

Date Prepared	22-Jan-2018
pH (pH Units)	8.39
Conductivity (µS/cm)	114.00
Temperature (°C)	19.80
Volume Leachant (Litres)	0.878

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180118-49	**Client Reference:**		**Report Number:**	448302
Location:	Llanwern	**Order Number:**	LLA388	**Superseded Report:**	442943

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.108	**Natural Moisture Content (%)**	20.3
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	83.2
Particle Size <4mm	>95%		

Case	
SDG	180118-49
Lab Sample Number(s)	16889564
Sampled Date	17-Jan-2018
Customer Sample Ref.	W83-06
Depth (m)	0.00 - 0.00

Eluate Analysis	**C_2** Concⁿ in 10:1 eluate (mg/l)		**A_2** 10:1 concⁿ leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Naphthalene (diss.filt)	0.0000143	<0.00001	0.000143	<0.0001	-	-	-
Total Ammonia as NH3	<0.2	<0.2	<2	<2	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Acenaphthene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Arsenic	0.0038	<0.0005	0.038	<0.005	-	-	-
Acenaphthylene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene (diss.filt)	0.0000167	<0.000005	0.000167	<0.00005	-	-	-
Anthracene (diss.filt)	0.00000528	<0.000005	0.0000528	<0.00005	-	-	-
Iron	0.0511	<0.019	0.511	<0.19	-	-	-
Phenanthrene (diss.filt)	0.000015	<0.000005	0.00015	<0.00005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Fluorene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene (diss.filt)	0.0000066	<0.000005	0.000066	<0.00005	-	-	-
Pyrene (diss.filt)	0.0000173	<0.000005	0.000173	<0.00005	-	-	-
Benzo(a)anthracene (diss.filt)	0.0000108	<0.000005	0.000108	<0.00005	-	-	-
Chromium	0.00202	<0.001	0.0202	<0.01	-	-	-
Benzo(b)fluoranthene (diss.filt)	0.0000156	<0.000005	0.000156	<0.00005	-	-	-
Benzo(k)fluoranthene (diss.filt)	0.00000532	<0.000005	0.0000532	<0.00005	-	-	-
Benzo(a)pyrene (diss.filt)	0.00000498	<0.000002	0.0000498	<0.00002	-	-	-
Copper	0.000892	<0.0003	0.00892	<0.003	-	-	-
Dibenzo(a,h)anthracene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Lead	0.000848	<0.0002	0.00848	<0.002	-	-	-
Benzo(g,h,i)perylene (diss.filt)	0.0000182	<0.000005	0.000182	<0.00005	-	-	-
Indeno(1,2,3-cd)pyrene (diss.filt)	0.00000897	<0.000005	0.0000897	<0.00005	-	-	-

Leach Test Information

Date Prepared	20-Jan-2018
pH (pH Units)	8.36
Conductivity (µS/cm)	120.00
Temperature (°C)	13.70
Volume Leachant (Litres)	0.882

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180118-49	**Client Reference:**		**Report Number:**	448302
Location:	Llanwern	**Order Number:**	LLA388	**Superseded Report:**	442943

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.108	**Natural Moisture Content (%)**	20.3
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	83.2
Particle Size <4mm	>95%		

Case				
SDG	180118-49			
Lab Sample Number(s)	16889564			
Sampled Date	17-Jan-2018			
Customer Sample Ref.	W83-06			
Depth (m)	0.00 - 0.00			

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Manganese	0.00494	<0.001	0.0494	<0.01	-	-	-
PAH 16 EPA Total by GCMS (diss.filt)	0.000139	<0.000082	0.00139	<0.00082	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	0.00276	<0.0005	0.0276	<0.005	-	-	-
Vanadium	0.0424	<0.001	0.424	<0.01	-	-	-
Zinc	0.00139	<0.001	0.0139	<0.01	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
VOC MS (W)							
Benzene	<0.001	<0.001	<0.01	<0.01	-	-	-
Toluene	<0.001	<0.001	<0.01	<0.01	-	-	-
Ethylbenzene	<0.001	<0.001	<0.01	<0.01	-	-	-
p/m-Xylene	<0.001	<0.001	<0.01	<0.01	-	-	-
o-Xylene	<0.001	<0.001	<0.01	<0.01	-	-	-
Total Xylenes	<0.002	<0.002	<0.02	<0.02	-	-	-

Leach Test Information

Date Prepared	20-Jan-2018
pH (pH Units)	8.36
Conductivity (µS/cm)	120.00
Temperature (°C)	13.70
Volume Leachant (Litres)	0.882

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180118-49	**Client Reference:**		**Report Number:**	448302
Location:	Llanwern	**Order Number:**	LLA388	**Superseded Report:**	442943

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.110	**Natural Moisture Content (%)**	21.3
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	82.4
Particle Size <4mm	>95%		

Case	
SDG	180118-49
Lab Sample Number(s)	16889568
Sampled Date	17-Jan-2018
Customer Sample Ref.	W83-07
Depth (m)	0.00 - 0.00

Eluate Analysis	**C_2** Concⁿ in 10:1 eluate (mg/l)		**A_2** 10:1 concⁿ leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Naphthalene (diss.filt)	0.0000111	<0.00001	0.000111	<0.0001	-	-	-
Total Ammonia as NH3	<0.2	<0.2	<2	<2	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Acenaphthene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Arsenic	0.00399	<0.0005	0.0399	<0.005	-	-	-
Acenaphthylene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene (diss.filt)	0.0000341	<0.000005	0.000341	<0.00005	-	-	-
Anthracene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Iron	0.041	<0.019	0.41	<0.19	-	-	-
Phenanthrene (diss.filt)	0.0000235	<0.000005	0.000235	<0.00005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Fluorene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene (diss.filt)	0.0000265	<0.000005	0.000265	<0.00005	-	-	-
Pyrene (diss.filt)	0.0000335	<0.000005	0.000335	<0.00005	-	-	-
Benzo(a)anthracene (diss.filt)	0.0000265	<0.000005	0.000265	<0.00005	-	-	-
Chromium	0.00184	<0.001	0.0184	<0.01	-	-	-
Benzo(b)fluoranthene (diss.filt)	0.0000278	<0.000005	0.000278	<0.00005	-	-	-
Benzo(k)fluoranthene (diss.filt)	0.0000144	<0.000005	0.000144	<0.00005	-	-	-
Benzo(a)pyrene (diss.filt)	0.0000137	<0.000002	0.000137	<0.00002	-	-	-
Copper	0.0011	<0.0003	0.011	<0.003	-	-	-
Dibenzo(a,h)anthracene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Lead	0.000604	<0.0002	0.00604	<0.002	-	-	-
Benzo(g,h,i)perylene (diss.filt)	0.0000262	<0.000005	0.000262	<0.00005	-	-	-
Indeno(1,2,3-cd)pyrene (diss.filt)	0.0000129	<0.000005	0.000129	<0.00005	-	-	-

Leach Test Information

Date Prepared	22-Jan-2018
pH (pH Units)	9.28
Conductivity (µS/cm)	136.00
Temperature (°C)	19.80
Volume Leachant (Litres)	0.881

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180118-49	**Client Reference:**		**Report Number:**	448302
Location:	Llanwern	**Order Number:**	LLA388	**Superseded Report:**	442943

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.110	**Natural Moisture Content (%)**	21.3
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	82.4
Particle Size <4mm	>95%		

Case	
SDG	180118-49
Lab Sample Number(s)	16889568
Sampled Date	17-Jan-2018
Customer Sample Ref.	W83-07
Depth (m)	0.00 - 0.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Manganese	0.00398	<0.001	0.0398	<0.01	-	-	-
PAH 16 EPA Total by GCMS (diss.filt)	0.00025	<0.000082	0.0025	<0.00082	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	0.00253	<0.0005	0.0253	<0.005	-	-	-
Vanadium	0.0712	<0.001	0.712	<0.01	-	-	-
Zinc	0.00192	<0.001	0.0192	<0.01	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
VOC MS (W)							
Benzene	<0.001	<0.001	<0.01	<0.01	-	-	-
Toluene	<0.001	<0.001	<0.01	<0.01	-	-	-
Ethylbenzene	<0.001	<0.001	<0.01	<0.01	-	-	-
p/m-Xylene	<0.001	<0.001	<0.01	<0.01	-	-	-
o-Xylene	<0.001	<0.001	<0.01	<0.01	-	-	-
Total Xylenes	<0.002	<0.002	<0.02	<0.02	-	-	-

Leach Test Information

Date Prepared	22-Jan-2018
pH (pH Units)	9.28
Conductivity (µS/cm)	136.00
Temperature (°C)	19.80
Volume Leachant (Litres)	0.881

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180118-49	**Client Reference:**		**Report Number:**	448302
Location:	Llanwern	**Order Number:**	LLA388	**Superseded Report:**	442943

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.106	**Natural Moisture Content (%)**	17.9
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	84.8
Particle Size <4mm	>95%		

Case	
SDG	180118-49
Lab Sample Number(s)	16889572
Sampled Date	17-Jan-2018
Customer Sample Ref.	W83-08
Depth (m)	0.00 - 0.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Naphthalene (diss.filt)	0.0000102	<0.00001	0.000102	<0.0001	-	-	-
Total Ammonia as NH3	<0.2	<0.2	<2	<2	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Acenaphthene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Arsenic	0.00338	<0.0005	0.0338	<0.005	-	-	-
Acenaphthylene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene (diss.filt)	0.000013	<0.000005	0.00013	<0.00005	-	-	-
Anthracene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Iron	0.0578	<0.019	0.578	<0.19	-	-	-
Phenanthrene (diss.filt)	0.0000102	<0.000005	0.000102	<0.00005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Fluorene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene (diss.filt)	0.0000147	<0.000005	0.000147	<0.00005	-	-	-
Pyrene (diss.filt)	0.000012	<0.000005	0.00012	<0.00005	-	-	-
Benzo(a)anthracene (diss.filt)	0.0000172	<0.000005	0.000172	<0.00005	-	-	-
Chromium	0.00172	<0.001	0.0172	<0.01	-	-	-
Benzo(b)fluoranthene (diss.filt)	0.000015	<0.000005	0.00015	<0.00005	-	-	-
Benzo(k)fluoranthene (diss.filt)	0.00000887	<0.000005	0.0000887	<0.00005	-	-	-
Benzo(a)pyrene (diss.filt)	0.00000582	<0.000002	0.0000582	<0.00002	-	-	-
Copper	0.000828	<0.0003	0.00828	<0.003	-	-	-
Dibenzo(a,h)anthracene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Lead	0.000763	<0.0002	0.00763	<0.002	-	-	-
Benzo(g,h,i)perylene (diss.filt)	0.000018	<0.000005	0.00018	<0.00005	-	-	-
Indeno(1,2,3-cd)pyrene (diss.filt)	0.00000744	<0.000005	0.0000744	<0.00005	-	-	-

Leach Test Information

Date Prepared	22-Jan-2018
pH (pH Units)	9.15
Conductivity (µS/cm)	117.00
Temperature (°C)	20.00
Volume Leachant (Litres)	0.884

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180118-49	**Client Reference:**		**Report Number:**	448302
Location:	Llanwern	**Order Number:**	LLA388	**Superseded Report:**	442943

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.106	**Natural Moisture Content (%)**	17.9
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	84.8
Particle Size <4mm	>95%		

Case	
SDG	180118-49
Lab Sample Number(s)	16889572
Sampled Date	17-Jan-2018
Customer Sample Ref.	W83-08
Depth (m)	0.00 - 0.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Manganese	0.0065	<0.001	0.065	<0.01	-	-	-
PAH 16 EPA Total by GCMS (diss.filt)	0.000132	<0.000082	0.00132	<0.00082	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	0.00165	<0.0005	0.0165	<0.005	-	-	-
Vanadium	0.0503	<0.001	0.503	<0.01	-	-	-
Zinc	0.00242	<0.001	0.0242	<0.01	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
VOC MS (W)							
Benzene	<0.001	<0.001	<0.01	<0.01	-	-	-
Toluene	<0.001	<0.001	<0.01	<0.01	-	-	-
Ethylbenzene	<0.001	<0.001	<0.01	<0.01	-	-	-
p/m-Xylene	<0.001	<0.001	<0.01	<0.01	-	-	-
o-Xylene	<0.001	<0.001	<0.01	<0.01	-	-	-
Total Xylenes	<0.002	<0.002	<0.02	<0.02	-	-	-

Leach Test Information

Date Prepared	22-Jan-2018
pH (pH Units)	9.15
Conductivity (µS/cm)	117.00
Temperature (°C)	20.00
Volume Leachant (Litres)	0.884

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180118-49	**Client Reference:**		**Report Number:**	448302
Location:	Llanwern	**Order Number:**	LLA388	**Superseded Report:**	442943

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.108	**Natural Moisture Content (%)**	19.6
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	83.6
Particle Size <4mm	>95%		

Case	
SDG	180118-49
Lab Sample Number(s)	16889576
Sampled Date	17-Jan-2018
Customer Sample Ref.	W83-09
Depth (m)	0.00 - 0.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	0.264	<0.01	2.64	<0.1	-	-	-
Total Aliphatics >C12-C35	0.264	<0.01	2.64	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	0.264	<0.01	2.64	<0.1	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Naphthalene (diss.filt)	0.0000109	<0.00001	0.000109	<0.0001	-	-	-
Total Ammonia as NH3	<0.2	<0.2	<2	<2	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Acenaphthene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Arsenic	0.00457	<0.0005	0.0457	<0.005	-	-	-
Acenaphthylene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene (diss.filt)	0.0000175	<0.000005	0.000175	<0.00005	-	-	-
Anthracene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Iron	0.0563	<0.019	0.563	<0.19	-	-	-
Phenanthrene (diss.filt)	0.0000163	<0.000005	0.000163	<0.00005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Fluorene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene (diss.filt)	0.0000126	<0.000005	0.000126	<0.00005	-	-	-
Pyrene (diss.filt)	0.000017	<0.000005	0.00017	<0.00005	-	-	-
Benzo(a)anthracene (diss.filt)	0.0000167	<0.000005	0.000167	<0.00005	-	-	-
Chromium	0.00144	<0.001	0.0144	<0.01	-	-	-
Benzo(b)fluoranthene (diss.filt)	0.0000134	<0.000005	0.000134	<0.00005	-	-	-
Benzo(k)fluoranthene (diss.filt)	0.00000682	<0.000005	0.0000682	<0.00005	-	-	-
Benzo(a)pyrene (diss.filt)	0.00000537	<0.000002	0.0000537	<0.00002	-	-	-
Copper	0.00159	<0.0003	0.0159	<0.003	-	-	-
Dibenzo(a,h)anthracene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Lead	0.00465	<0.0002	0.0465	<0.002	-	-	-
Benzo(g,h,i)perylene (diss.filt)	0.0000189	<0.000005	0.000189	<0.00005	-	-	-
Indeno(1,2,3-cd)pyrene (diss.filt)	0.00000761	<0.000005	0.0000761	<0.00005	-	-	-

Leach Test Information

Date Prepared	22-Jan-2018
pH (pH Units)	9.12
Conductivity (µS/cm)	126.00
Temperature (°C)	19.90
Volume Leachant (Litres)	0.882

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180118-49	**Client Reference:**		**Report Number:**	448302
Location:	Llanwern	**Order Number:**	LLA388	**Superseded Report:**	442943

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.108	**Natural Moisture Content (%)**	19.6
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	83.6
Particle Size <4mm	>95%		

Case	
SDG	180118-49
Lab Sample Number(s)	16889576
Sampled Date	17-Jan-2018
Customer Sample Ref.	W83-09
Depth (m)	0.00 - 0.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Manganese	0.00494	<0.001	0.0494	<0.01	-	-	-
PAH 16 EPA Total by GCMS (diss.filt)	0.000143	<0.000082	0.00143	<0.00082	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	0.00292	<0.0005	0.0292	<0.005	-	-	-
Vanadium	0.0643	<0.001	0.643	<0.01	-	-	-
Zinc	0.00246	<0.001	0.0246	<0.01	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
VOC MS (W)							
Benzene	<0.001	<0.001	<0.01	<0.01	-	-	-
Toluene	<0.001	<0.001	<0.01	<0.01	-	-	-
Ethylbenzene	<0.001	<0.001	<0.01	<0.01	-	-	-
p/m-Xylene	<0.001	<0.001	<0.01	<0.01	-	-	-
o-Xylene	<0.001	<0.001	<0.01	<0.01	-	-	-
Total Xylenes	<0.002	<0.002	<0.02	<0.02	-	-	-

Leach Test Information

Date Prepared	22-Jan-2018
pH (pH Units)	9.12
Conductivity (µS/cm)	126.00
Temperature (°C)	19.90
Volume Leachant (Litres)	0.882

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180118-49	**Client Reference:**		**Report Number:**	448302
Location:	Llanwern	**Order Number:**	LLA388	**Superseded Report:**	442943

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.114	**Natural Moisture Content (%)**	26.3
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	79.2
Particle Size <4mm	>95%		

Case	
SDG	180118-49
Lab Sample Number(s)	16889580
Sampled Date	17-Jan-2018
Customer Sample Ref.	W134-01
Depth (m)	0.00 - 0.00

Eluate Analysis	**C_2** Concⁿ in 10:1 eluate (mg/l)		**A_2** 10:1 concⁿ leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Naphthalene (diss.filt)	0.000141	<0.00001	0.00141	<0.0001	-	-	-
Total Ammonia as NH3	0.259	<0.2	2.59	<2	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Acenaphthene (diss.filt)	0.000277	<0.000005	0.00277	<0.00005	-	-	-
Arsenic	0.00257	<0.0005	0.0257	<0.005	-	-	-
Acenaphthylene (diss.filt)	0.000766	<0.000005	0.00766	<0.00005	-	-	-
Fluoranthene (diss.filt)	0.000593	<0.000005	0.00593	<0.00005	-	-	-
Anthracene (diss.filt)	0.000222	<0.000005	0.00222	<0.00005	-	-	-
Iron	<0.019	<0.019	<0.19	<0.19	-	-	-
Phenanthrene (diss.filt)	0.0012	<0.000005	0.012	<0.00005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Fluorene (diss.filt)	0.00036	<0.000005	0.0036	<0.00005	-	-	-
Chrysene (diss.filt)	0.0000645	<0.000005	0.000645	<0.00005	-	-	-
Pyrene (diss.filt)	0.000426	<0.000005	0.00426	<0.00005	-	-	-
Benzo(a)anthracene (diss.filt)	0.000039	<0.000005	0.00039	<0.00005	-	-	-
Chromium	0.00182	<0.001	0.0182	<0.01	-	-	-
Benzo(b)fluoranthene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene (diss.filt)	0.000011	<0.000002	0.00011	<0.00002	-	-	-
Copper	0.00669	<0.0003	0.0669	<0.003	-	-	-
Dibenzo(a,h)anthracene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Benzo(g,h,i)perylene (diss.filt)	0.0000158	<0.000005	0.000158	<0.00005	-	-	-
Indeno(1,2,3-cd)pyrene (diss.filt)	0.0000109	<0.000005	0.000109	<0.00005	-	-	-

Leach Test Information

Date Prepared	20-Jan-2018
pH (pH Units)	11.06
Conductivity (µS/cm)	420.00
Temperature (°C)	19.70
Volume Leachant (Litres)	0.876

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180118-49	**Client Reference:**		**Report Number:**	448302
Location:	Llanwern	**Order Number:**	LLA388	**Superseded Report:**	442943

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.114	**Natural Moisture Content (%)**	26.3
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	79.2
Particle Size <4mm	>95%		

Case	
SDG	180118-49
Lab Sample Number(s)	16889580
Sampled Date	17-Jan-2018
Customer Sample Ref.	W134-01
Depth (m)	0.00 - 0.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Manganese	0.00113	<0.001	0.0113	<0.01	-	-	-
PAH 16 EPA Total by GCMS (diss.filt)	0.00413	<0.000082	0.0413	<0.00082	-	-	-
Nickel	0.00199	<0.0004	0.0199	<0.004	-	-	-
Selenium	0.00301	<0.0005	0.0301	<0.005	-	-	-
Vanadium	0.108	<0.001	1.08	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
VOC MS (W)							
Benzene	0.00109	<0.001	0.0109	<0.01	-	-	-
Toluene	<0.001	<0.001	<0.01	<0.01	-	-	-
Ethylbenzene	<0.001	<0.001	<0.01	<0.01	-	-	-
p/m-Xylene	<0.001	<0.001	<0.01	<0.01	-	-	-
o-Xylene	<0.001	<0.001	<0.01	<0.01	-	-	-
Total Xylenes	<0.002	<0.002	<0.02	<0.02	-	-	-

Leach Test Information

Date Prepared	20-Jan-2018
pH (pH Units)	11.06
Conductivity (µS/cm)	420.00
Temperature (°C)	19.70
Volume Leachant (Litres)	0.876

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180118-49	**Client Reference:**		**Report Number:**	448302
Location:	Llanwern	**Order Number:**	LLA388	**Superseded Report:**	442943

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.105	**Natural Moisture Content (%)**	16.3
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	86
Particle Size <4mm	>95%		

Case	
SDG	180118-49
Lab Sample Number(s)	16889585
Sampled Date	17-Jan-2018
Customer Sample Ref.	W84-02
Depth (m)	0.00 - 0.00

Eluate Analysis	**C_2** Concⁿ in 10:1 eluate (mg/l)		**A_2** 10:1 concⁿ leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Naphthalene (diss.filt)	0.0000117	<0.00001	0.000117	<0.0001	-	-	-
Total Ammonia as NH3	<0.2	<0.2	<2	<2	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Acenaphthene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Arsenic	0.00513	<0.0005	0.0513	<0.005	-	-	-
Acenaphthylene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene (diss.filt)	0.0000239	<0.000005	0.000239	<0.00005	-	-	-
Anthracene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Iron	0.0655	<0.019	0.655	<0.19	-	-	-
Phenanthrene (diss.filt)	0.0000268	<0.000005	0.000268	<0.00005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Fluorene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene (diss.filt)	0.0000253	<0.000005	0.000253	<0.00005	-	-	-
Pyrene (diss.filt)	0.0000257	<0.000005	0.000257	<0.00005	-	-	-
Benzo(a)anthracene (diss.filt)	0.0000182	<0.000005	0.000182	<0.00005	-	-	-
Chromium	0.00139	<0.001	0.0139	<0.01	-	-	-
Benzo(b)fluoranthene (diss.filt)	0.0000304	<0.000005	0.000304	<0.00005	-	-	-
Benzo(k)fluoranthene (diss.filt)	0.0000173	<0.000005	0.000173	<0.00005	-	-	-
Benzo(a)pyrene (diss.filt)	0.0000103	<0.000002	0.000103	<0.00002	-	-	-
Copper	0.00102	<0.0003	0.0102	<0.003	-	-	-
Dibenzo(a,h)anthracene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Lead	0.000695	<0.0002	0.00695	<0.002	-	-	-
Benzo(g,h,i)perylene (diss.filt)	0.000026	<0.000005	0.00026	<0.00005	-	-	-
Indeno(1,2,3-cd)pyrene (diss.filt)	0.0000151	<0.000005	0.000151	<0.00005	-	-	-

Leach Test Information

Date Prepared	22-Jan-2018
pH (pH Units)	9.43
Conductivity (µS/cm)	110.00
Temperature (°C)	19.90
Volume Leachant (Litres)	0.885

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180118-49	**Client Reference:**		**Report Number:**	448302
Location:	Llanwern	**Order Number:**	LLA388	**Superseded Report:**	442943

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.105	**Natural Moisture Content (%)**	16.3
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	86
Particle Size <4mm	>95%		

Case	
SDG	180118-49
Lab Sample Number(s)	16889585
Sampled Date	17-Jan-2018
Customer Sample Ref.	W84-02
Depth (m)	0.00 - 0.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Manganese	0.00566	<0.001	0.0566	<0.01	-	-	-
PAH 16 EPA Total by GCMS (diss.filt)	0.000231	<0.000082	0.00231	<0.00082	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	0.00297	<0.0005	0.0297	<0.005	-	-	-
Vanadium	0.0785	<0.001	0.785	<0.01	-	-	-
Zinc	0.00166	<0.001	0.0166	<0.01	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
VOC MS (W)							
Benzene	<0.001	<0.001	<0.01	<0.01	-	-	-
Toluene	<0.001	<0.001	<0.01	<0.01	-	-	-
Ethylbenzene	<0.001	<0.001	<0.01	<0.01	-	-	-
p/m-Xylene	<0.001	<0.001	<0.01	<0.01	-	-	-
o-Xylene	<0.001	<0.001	<0.01	<0.01	-	-	-
Total Xylenes	<0.002	<0.002	<0.02	<0.02	-	-	-

Leach Test Information

Date Prepared	22-Jan-2018
pH (pH Units)	9.43
Conductivity (µS/cm)	110.00
Temperature (°C)	19.90
Volume Leachant (Litres)	0.885

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180118-49	**Client Reference:**		**Report Number:**	448302
Location:	Llanwern	**Order Number:**	LLA388	**Superseded Report:**	442943

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.110	**Natural Moisture Content (%)**	22
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	81.9
Particle Size <4mm	>95%		

Case	
SDG	180118-49
Lab Sample Number(s)	16889590
Sampled Date	17-Jan-2018
Customer Sample Ref.	W134-02
Depth (m)	0.00 - 0.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Naphthalene (diss.filt)	0.000142	<0.00001	0.00142	<0.0001	-	-	-
Total Ammonia as NH3	0.306	<0.2	3.06	<2	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Acenaphthene (diss.filt)	0.000455	<0.000005	0.00455	<0.00005	-	-	-
Arsenic	0.00299	<0.0005	0.0299	<0.005	-	-	-
Acenaphthylene (diss.filt)	0.00126	<0.000005	0.0126	<0.00005	-	-	-
Fluoranthene (diss.filt)	0.00112	<0.000005	0.0112	<0.00005	-	-	-
Anthracene (diss.filt)	0.000464	<0.000005	0.00464	<0.00005	-	-	-
Iron	<0.019	<0.019	<0.19	<0.19	-	-	-
Phenanthrene (diss.filt)	0.00257	<0.000005	0.0257	<0.00005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Fluorene (diss.filt)	0.000969	<0.000005	0.00969	<0.00005	-	-	-
Chrysene (diss.filt)	0.0000835	<0.000005	0.000835	<0.00005	-	-	-
Pyrene (diss.filt)	0.000756	<0.000005	0.00756	<0.00005	-	-	-
Benzo(a)anthracene (diss.filt)	0.0000506	<0.000005	0.000506	<0.00005	-	-	-
Chromium	0.00222	<0.001	0.0222	<0.01	-	-	-
Benzo(b)fluoranthene (diss.filt)	0.0000263	<0.000005	0.000263	<0.00005	-	-	-
Benzo(k)fluoranthene (diss.filt)	0.0000158	<0.000005	0.000158	<0.00005	-	-	-
Benzo(a)pyrene (diss.filt)	0.00000895	<0.000002	0.0000895	<0.00002	-	-	-
Copper	0.0102	<0.0003	0.102	<0.003	-	-	-
Dibenzo(a,h)anthracene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Lead	0.00032	<0.0002	0.0032	<0.002	-	-	-
Benzo(g,h,i)perylene (diss.filt)	0.00000944	<0.000005	0.0000944	<0.00005	-	-	-
Indeno(1,2,3-cd)pyrene (diss.filt)	0.00000869	<0.000005	0.0000869	<0.00005	-	-	-

Leach Test Information

Date Prepared	20-Jan-2018
pH (pH Units)	11.15
Conductivity (µS/cm)	414.00
Temperature (°C)	19.90
Volume Leachant (Litres)	0.880

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180118-49	**Client Reference:**		**Report Number:**	448302
Location:	Llanwern	**Order Number:**	LLA388	**Superseded Report:**	442943

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.110	**Natural Moisture Content (%)**	22
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	81.9
Particle Size <4mm	>95%		

Case	
SDG	180118-49
Lab Sample Number(s)	16889590
Sampled Date	17-Jan-2018
Customer Sample Ref.	W134-02
Depth (m)	0.00 - 0.00

Eluate Analysis	**C_2** Concⁿ in 10:1 eluate (mg/l)		**A_2** 10:1 concⁿ leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Manganese	0.00117	<0.001	0.0117	<0.01	-	-	-
PAH 16 EPA Total by GCMS (diss.filt)	0.00793	<0.000082	0.0793	<0.00082	-	-	-
Nickel	0.00277	<0.0004	0.0277	<0.004	-	-	-
Selenium	0.00359	<0.0005	0.0359	<0.005	-	-	-
Vanadium	0.118	<0.001	1.18	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
VOC MS (W)							
Benzene	0.00107	<0.001	0.0107	<0.01	-	-	-
Toluene	<0.001	<0.001	<0.01	<0.01	-	-	-
Ethylbenzene	<0.001	<0.001	<0.01	<0.01	-	-	-
p/m-Xylene	<0.001	<0.001	<0.01	<0.01	-	-	-
o-Xylene	<0.001	<0.001	<0.01	<0.01	-	-	-
Total Xylenes	<0.002	<0.002	<0.02	<0.02	-	-	-

Leach Test Information

Date Prepared	20-Jan-2018
pH (pH Units)	11.15
Conductivity (µS/cm)	414.00
Temperature (°C)	19.90
Volume Leachant (Litres)	0.880

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180118-49	**Client Reference:**		**Report Number:**	448302
Location:	Llanwern	**Order Number:**	LLA388	**Superseded Report:**	442943

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.114	**Natural Moisture Content (%)**	26.6
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	79
Particle Size <4mm	>95%		

Case	
SDG	180118-49
Lab Sample Number(s)	16889597
Sampled Date	17-Jan-2018
Customer Sample Ref.	W134-03
Depth (m)	0.00 - 0.00

Eluate Analysis	**C_2** Concⁿ in 10:1 eluate (mg/l)		**A_2** 10:1 concⁿ leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Naphthalene (diss.filt)	0.000172	<0.00001	0.00172	<0.0001	-	-	-
Total Ammonia as NH3	<0.2	<0.2	<2	<2	-	-	-
Total Cyanide (W)	0.069	<0.05	0.69	<0.5	-	-	-
Acenaphthene (diss.filt)	0.000254	<0.000005	0.00254	<0.00005	-	-	-
Arsenic	0.00755	<0.0005	0.0755	<0.005	-	-	-
Acenaphthylene (diss.filt)	0.000747	<0.000005	0.00747	<0.00005	-	-	-
Fluoranthene (diss.filt)	0.000936	<0.000005	0.00936	<0.00005	-	-	-
Anthracene (diss.filt)	0.000288	<0.000005	0.00288	<0.00005	-	-	-
Iron	0.0445	<0.019	0.445	<0.19	-	-	-
Phenanthrene (diss.filt)	0.00128	<0.000005	0.0128	<0.00005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Fluorene (diss.filt)	0.0005	<0.000005	0.005	<0.00005	-	-	-
Chrysene (diss.filt)	0.000148	<0.000005	0.00148	<0.00005	-	-	-
Pyrene (diss.filt)	0.000679	<0.000005	0.00679	<0.00005	-	-	-
Benzo(a)anthracene (diss.filt)	0.000172	<0.000005	0.00172	<0.00005	-	-	-
Chromium	0.00273	<0.001	0.0273	<0.01	-	-	-
Benzo(b)fluoranthene (diss.filt)	0.000137	<0.000005	0.00137	<0.00005	-	-	-
Benzo(k)fluoranthene (diss.filt)	0.0000549	<0.000005	0.000549	<0.00005	-	-	-
Benzo(a)pyrene (diss.filt)	0.0000668	<0.000002	0.000668	<0.00002	-	-	-
Copper	0.0092	<0.0003	0.092	<0.003	-	-	-
Dibenzo(a,h)anthracene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Benzo(g,h,i)perylene (diss.filt)	0.0000869	<0.000005	0.000869	<0.00005	-	-	-
Indeno(1,2,3-cd)pyrene (diss.filt)	0.0000683	<0.000005	0.000683	<0.00005	-	-	-

Leach Test Information

Date Prepared	20-Jan-2018
pH (pH Units)	10.76
Conductivity (µS/cm)	288.00
Temperature (°C)	19.90
Volume Leachant (Litres)	0.876

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180118-49	**Client Reference:**		**Report Number:**	448302
Location:	Llanwern	**Order Number:**	LLA388	**Superseded Report:**	442943

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.114	**Natural Moisture Content (%)**	26.6
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	79
Particle Size <4mm	>95%		

Case	
SDG	180118-49
Lab Sample Number(s)	16889597
Sampled Date	17-Jan-2018
Customer Sample Ref.	W134-03
Depth (m)	0.00 - 0.00

Eluate Analysis	**C_2** Concⁿ in 10:1 eluate (mg/l)		**A_2** 10:1 concⁿ leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Manganese	0.00185	<0.001	0.0185	<0.01	-	-	-
PAH 16 EPA Total by GCMS (diss.filt)	0.00559	<0.000082	0.0559	<0.00082	-	-	-
Nickel	0.00224	<0.0004	0.0224	<0.004	-	-	-
Selenium	0.00678	<0.0005	0.0678	<0.005	-	-	-
Vanadium	0.158	<0.001	1.58	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
VOC MS (W)							
Benzene	0.00128	<0.001	0.0128	<0.01	-	-	-
Toluene	<0.001	<0.001	<0.01	<0.01	-	-	-
Ethylbenzene	<0.001	<0.001	<0.01	<0.01	-	-	-
p/m-Xylene	<0.001	<0.001	<0.01	<0.01	-	-	-
o-Xylene	<0.001	<0.001	<0.01	<0.01	-	-	-
Total Xylenes	<0.002	<0.002	<0.02	<0.02	-	-	-

Leach Test Information

Date Prepared	20-Jan-2018
pH (pH Units)	10.76
Conductivity (µS/cm)	288.00
Temperature (°C)	19.90
Volume Leachant (Litres)	0.876

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180118-49	**Client Reference:**		**Report Number:**	448302
Location:	Llanwern	**Order Number:**	LLA388	**Superseded Report:**	442943

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.109	**Natural Moisture Content (%)**	20.7
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	82.8
Particle Size <4mm	>95%		

Case	
SDG	180118-49
Lab Sample Number(s)	16889602
Sampled Date	17-Jan-2018
Customer Sample Ref.	W134-04
Depth (m)	0.00 - 0.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Naphthalene (diss.filt)	0.000478	<0.00001	0.00478	<0.0001	-	-	-
Total Ammonia as NH3	0.48	<0.2	4.8	<2	-	-	-
Total Cyanide (W)	0.082	<0.05	0.82	<0.5	-	-	-
Acenaphthene (diss.filt)	0.000697	<0.000005	0.00697	<0.00005	-	-	-
Arsenic	0.00507	<0.0005	0.0507	<0.005	-	-	-
Acenaphthylene (diss.filt)	0.00064	<0.000005	0.0064	<0.00005	-	-	-
Fluoranthene (diss.filt)	0.0033	<0.000005	0.033	<0.00005	-	-	-
Anthracene (diss.filt)	0.000688	<0.000005	0.00688	<0.00005	-	-	-
Iron	0.0326	<0.019	0.326	<0.19	-	-	-
Phenanthrene (diss.filt)	0.00249	<0.000005	0.0249	<0.00005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Fluorene (diss.filt)	0.000647	<0.000005	0.00647	<0.00005	-	-	-
Chrysene (diss.filt)	0.00074	<0.000005	0.0074	<0.00005	-	-	-
Pyrene (diss.filt)	0.00239	<0.000005	0.0239	<0.00005	-	-	-
Benzo(a)anthracene (diss.filt)	0.000561	<0.000005	0.00561	<0.00005	-	-	-
Chromium	0.00244	<0.001	0.0244	<0.01	-	-	-
Benzo(b)fluoranthene (diss.filt)	0.000547	<0.000005	0.00547	<0.00005	-	-	-
Benzo(k)fluoranthene (diss.filt)	0.000328	<0.000005	0.00328	<0.00005	-	-	-
Benzo(a)pyrene (diss.filt)	0.000327	<0.000002	0.00327	<0.00002	-	-	-
Copper	0.0107	<0.0003	0.107	<0.003	-	-	-
Dibenzo(a,h)anthracene (diss.filt)	0.0000646	<0.000005	0.000646	<0.00005	-	-	-
Lead	0.000239	<0.0002	0.00239	<0.002	-	-	-
Benzo(g,h,i)perylene (diss.filt)	0.000328	<0.000005	0.00328	<0.00005	-	-	-
Indeno(1,2,3-cd)pyrene (diss.filt)	0.00025	<0.000005	0.0025	<0.00005	-	-	-

Leach Test Information

Date Prepared	20-Jan-2018
pH (pH Units)	10.60
Conductivity (µS/cm)	254.00
Temperature (°C)	19.80
Volume Leachant (Litres)	0.881

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180118-49	**Client Reference:**		**Report Number:**	448302
Location:	Llanwern	**Order Number:**	LLA388	**Superseded Report:**	442943

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.109	**Natural Moisture Content (%)**	20.7
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	82.8
Particle Size <4mm	>95%		

Case	
SDG	180118-49
Lab Sample Number(s)	16889602
Sampled Date	17-Jan-2018
Customer Sample Ref.	W134-04
Depth (m)	0.00 - 0.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Manganese	0.00336	<0.001	0.0336	<0.01	-	-	-
PAH 16 EPA Total by GCMS (diss.filt)	0.0145	<0.000082	0.145	<0.00082	-	-	-
Nickel	0.00236	<0.0004	0.0236	<0.004	-	-	-
Selenium	0.00412	<0.0005	0.0412	<0.005	-	-	-
Vanadium	0.166	<0.001	1.66	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
VOC MS (W)							
Benzene	0.00131	<0.001	0.0131	<0.01	-	-	-
Toluene	<0.001	<0.001	<0.01	<0.01	-	-	-
Ethylbenzene	<0.001	<0.001	<0.01	<0.01	-	-	-
p/m-Xylene	<0.001	<0.001	<0.01	<0.01	-	-	-
o-Xylene	<0.001	<0.001	<0.01	<0.01	-	-	-
Total Xylenes	<0.002	<0.002	<0.02	<0.02	-	-	-

Leach Test Information

Date Prepared	20-Jan-2018
pH (pH Units)	10.60
Conductivity (µS/cm)	254.00
Temperature (°C)	19.80
Volume Leachant (Litres)	0.881

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180118-49	**Client Reference:**		**Report Number:**	448302
Location:	Llanwern	**Order Number:**	LLA388	**Superseded Report:**	442943

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.115	**Natural Moisture Content (%)**	28.4
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	77.9
Particle Size <4mm	>95%		

Case	
SDG	180118-49
Lab Sample Number(s)	16889610
Sampled Date	17-Jan-2018
Customer Sample Ref.	W134-05
Depth (m)	0.00 - 0.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Naphthalene (diss.filt)	0.0000716	<0.00001	0.000716	<0.0001	-	-	-
Total Ammonia as NH3	0.533	<0.2	5.33	<2	-	-	-
Total Cyanide (W)	0.073	<0.05	0.73	<0.5	-	-	-
Acenaphthene (diss.filt)	0.000791	<0.000005	0.00791	<0.00005	-	-	-
Arsenic	0.00334	<0.0005	0.0334	<0.005	-	-	-
Acenaphthylene (diss.filt)	0.000917	<0.000005	0.00917	<0.00005	-	-	-
Fluoranthene (diss.filt)	0.00127	<0.000005	0.0127	<0.00005	-	-	-
Anthracene (diss.filt)	0.000529	<0.000005	0.00529	<0.00005	-	-	-
Iron	0.0241	<0.019	0.241	<0.19	-	-	-
Phenanthrene (diss.filt)	0.00269	<0.000005	0.0269	<0.00005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Fluorene (diss.filt)	0.000827	<0.000005	0.00827	<0.00005	-	-	-
Chrysene (diss.filt)	0.0000914	<0.000005	0.000914	<0.00005	-	-	-
Pyrene (diss.filt)	0.000819	<0.000005	0.00819	<0.00005	-	-	-
Benzo(a)anthracene (diss.filt)	0.0000499	<0.000005	0.000499	<0.00005	-	-	-
Chromium	0.00256	<0.001	0.0256	<0.01	-	-	-
Benzo(b)fluoranthene (diss.filt)	0.0000216	<0.000005	0.000216	<0.00005	-	-	-
Benzo(k)fluoranthene (diss.filt)	0.0000128	<0.000005	0.000128	<0.00005	-	-	-
Benzo(a)pyrene (diss.filt)	0.00000751	<0.000002	0.0000751	<0.00002	-	-	-
Copper	0.0133	<0.0003	0.133	<0.003	-	-	-
Dibenzo(a,h)anthracene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Lead	0.000275	<0.0002	0.00275	<0.002	-	-	-
Benzo(g,h,i)perylene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(1,2,3-cd)pyrene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-

Leach Test Information

Date Prepared	20-Jan-2018
pH (pH Units)	11.16
Conductivity (µS/cm)	421.00
Temperature (°C)	19.90
Volume Leachant (Litres)	0.874

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180118-49	**Client Reference:**		**Report Number:**	448302
Location:	Llanwern	**Order Number:**	LLA388	**Superseded Report:**	442943

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.115	**Natural Moisture Content (%)**	28.4
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	77.9
Particle Size <4mm	>95%		

Case	
SDG	180118-49
Lab Sample Number(s)	16889610
Sampled Date	17-Jan-2018
Customer Sample Ref.	W134-05
Depth (m)	0.00 - 0.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Manganese	0.00238	<0.001	0.0238	<0.01	-	-	-
PAH 16 EPA Total by GCMS (diss.filt)	0.0081	<0.000082	0.081	<0.00082	-	-	-
Nickel	0.00354	<0.0004	0.0354	<0.004	-	-	-
Selenium	0.00488	<0.0005	0.0488	<0.005	-	-	-
Vanadium	0.141	<0.001	1.41	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
VOC MS (W)							
Benzene	0.00105	<0.001	0.0105	<0.01	-	-	-
Toluene	<0.001	<0.001	<0.01	<0.01	-	-	-
Ethylbenzene	<0.001	<0.001	<0.01	<0.01	-	-	-
p/m-Xylene	<0.001	<0.001	<0.01	<0.01	-	-	-
o-Xylene	<0.001	<0.001	<0.01	<0.01	-	-	-
Total Xylenes	<0.002	<0.002	<0.02	<0.02	-	-	-

Leach Test Information

Date Prepared	20-Jan-2018
pH (pH Units)	11.16
Conductivity (µS/cm)	421.00
Temperature (°C)	19.90
Volume Leachant (Litres)	0.874

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180118-49	**Client Reference:**		**Report Number:**	448302
Location:	Llanwern	**Order Number:**	LLA388	**Superseded Report:**	442943

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.116	**Natural Moisture Content (%)**	29.6
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	77.2
Particle Size <4mm	>95%		

Case	
SDG	180118-49
Lab Sample Number(s)	16889615
Sampled Date	17-Jan-2018
Customer Sample Ref.	W134-06
Depth (m)	0.00 - 0.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Naphthalene (diss.filt)	0.000338	<0.00001	0.00338	<0.0001	-	-	-
Total Ammonia as NH3	<0.2	<0.2	<2	<2	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Acenaphthene (diss.filt)	0.000109	<0.000005	0.00109	<0.00005	-	-	-
Arsenic	0.00338	<0.0005	0.0338	<0.005	-	-	-
Acenaphthylene (diss.filt)	0.000206	<0.000005	0.00206	<0.00005	-	-	-
Fluoranthene (diss.filt)	0.00055	<0.000005	0.0055	<0.00005	-	-	-
Anthracene (diss.filt)	0.000164	<0.000005	0.00164	<0.00005	-	-	-
Iron	<0.019	<0.019	<0.19	<0.19	-	-	-
Phenanthrene (diss.filt)	0.000676	<0.000005	0.00676	<0.00005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Fluorene (diss.filt)	0.000133	<0.000005	0.00133	<0.00005	-	-	-
Chrysene (diss.filt)	0.000147	<0.000005	0.00147	<0.00005	-	-	-
Pyrene (diss.filt)	0.000435	<0.000005	0.00435	<0.00005	-	-	-
Benzo(a)anthracene (diss.filt)	0.0000947	<0.000005	0.000947	<0.00005	-	-	-
Chromium	0.00294	<0.001	0.0294	<0.01	-	-	-
Benzo(b)fluoranthene (diss.filt)	0.000101	<0.000005	0.00101	<0.00005	-	-	-
Benzo(k)fluoranthene (diss.filt)	0.0000938	<0.000005	0.000938	<0.00005	-	-	-
Benzo(a)pyrene (diss.filt)	0.0000517	<0.000002	0.000517	<0.00002	-	-	-
Copper	0.00657	<0.0003	0.0657	<0.003	-	-	-
Dibenzo(a,h)anthracene (diss.filt)	0.00000705	<0.000005	0.0000705	<0.00005	-	-	-
Lead	0.000311	<0.0002	0.00311	<0.002	-	-	-
Benzo(g,h,i)perylene (diss.filt)	0.0000973	<0.000005	0.000973	<0.00005	-	-	-
Indeno(1,2,3-cd)pyrene (diss.filt)	0.0000451	<0.000005	0.000451	<0.00005	-	-	-

Leach Test Information

Date Prepared	20-Jan-2018
pH (pH Units)	10.85
Conductivity (µS/cm)	326.00
Temperature (°C)	19.90
Volume Leachant (Litres)	0.873

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180118-49	**Client Reference:**		**Report Number:**	448302
Location:	Llanwern	**Order Number:**	LLA388	**Superseded Report:**	442943

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.116	**Natural Moisture Content (%)**	29.6
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	77.2
Particle Size <4mm	>95%		

Case	
SDG	180118-49
Lab Sample Number(s)	16889615
Sampled Date	17-Jan-2018
Customer Sample Ref.	W134-06
Depth (m)	0.00 - 0.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Manganese	0.00147	<0.001	0.0147	<0.01	-	-	-
PAH 16 EPA Total by GCMS (diss.filt)	0.00325	<0.000082	0.0325	<0.00082	-	-	-
Nickel	0.00178	<0.0004	0.0178	<0.004	-	-	-
Selenium	0.00299	<0.0005	0.0299	<0.005	-	-	-
Vanadium	0.141	<0.001	1.41	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
VOC MS (W)							
Benzene	0.001	<0.001	0.01	<0.01	-	-	-
Toluene	<0.001	<0.001	<0.01	<0.01	-	-	-
Ethylbenzene	<0.001	<0.001	<0.01	<0.01	-	-	-
p/m-Xylene	<0.001	<0.001	<0.01	<0.01	-	-	-
o-Xylene	<0.001	<0.001	<0.01	<0.01	-	-	-
Total Xylenes	<0.002	<0.002	<0.02	<0.02	-	-	-

Leach Test Information

Date Prepared	20-Jan-2018
pH (pH Units)	10.85
Conductivity (µS/cm)	326.00
Temperature (°C)	19.90
Volume Leachant (Litres)	0.873

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180118-49	**Client Reference:**		**Report Number:**	448302
Location:	Llanwern	**Order Number:**	LLA388	**Superseded Report:**	442943

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.116	**Natural Moisture Content (%)**	28.4
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	77.9
Particle Size <4mm	>95%		

Case	
SDG	180118-49
Lab Sample Number(s)	16889621
Sampled Date	17-Jan-2018
Customer Sample Ref.	W134-07
Depth (m)	0.00 - 0.00

Eluate Analysis	**C_2** Concⁿ in 10:1 eluate (mg/l)		**A_2** 10:1 concⁿ leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Naphthalene (diss.filt)	0.000239	<0.00001	0.00239	<0.0001	-	-	-
Total Ammonia as NH3	<0.2	<0.2	<2	<2	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Acenaphthene (diss.filt)	0.0000831	<0.000005	0.000831	<0.00005	-	-	-
Arsenic	0.00376	<0.0005	0.0376	<0.005	-	-	-
Acenaphthylene (diss.filt)	0.000184	<0.000005	0.00184	<0.00005	-	-	-
Fluoranthene (diss.filt)	0.00043	<0.000005	0.0043	<0.00005	-	-	-
Anthracene (diss.filt)	0.000133	<0.000005	0.00133	<0.00005	-	-	-
Iron	<0.019	<0.019	<0.19	<0.19	-	-	-
Phenanthrene (diss.filt)	0.000581	<0.000005	0.00581	<0.00005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Fluorene (diss.filt)	0.00011	<0.000005	0.0011	<0.00005	-	-	-
Chrysene (diss.filt)	0.000132	<0.000005	0.00132	<0.00005	-	-	-
Pyrene (diss.filt)	0.000345	<0.000005	0.00345	<0.00005	-	-	-
Benzo(a)anthracene (diss.filt)	0.0000655	<0.000005	0.000655	<0.00005	-	-	-
Chromium	0.0028	<0.001	0.028	<0.01	-	-	-
Benzo(b)fluoranthene (diss.filt)	0.0000607	<0.000005	0.000607	<0.00005	-	-	-
Benzo(k)fluoranthene (diss.filt)	0.0000505	<0.000005	0.000505	<0.00005	-	-	-
Benzo(a)pyrene (diss.filt)	0.0000296	<0.000002	0.000296	<0.00002	-	-	-
Copper	0.00752	<0.0003	0.0752	<0.003	-	-	-
Dibenzo(a,h)anthracene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Benzo(g,h,i)perylene (diss.filt)	0.00005	<0.000005	0.0005	<0.00005	-	-	-
Indeno(1,2,3-cd)pyrene (diss.filt)	0.000028	<0.000005	0.00028	<0.00005	-	-	-

Leach Test Information

Date Prepared	20-Jan-2018
pH (pH Units)	10.99
Conductivity (µS/cm)	378.00
Temperature (°C)	19.80
Volume Leachant (Litres)	0.874

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180118-49	**Client Reference:**		**Report Number:**	448302
Location:	Llanwern	**Order Number:**	LLA388	**Superseded Report:**	442943

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.116	**Natural Moisture Content (%)**	28.4
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	77.9
Particle Size <4mm	>95%		

Case	
SDG	180118-49
Lab Sample Number(s)	16889621
Sampled Date	17-Jan-2018
Customer Sample Ref.	W134-07
Depth (m)	0.00 - 0.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Manganese	0.00126	<0.001	0.0126	<0.01	-	-	-
PAH 16 EPA Total by GCMS (diss.filt)	0.00252	<0.000082	0.0252	<0.00082	-	-	-
Nickel	0.00209	<0.0004	0.0209	<0.004	-	-	-
Selenium	0.00333	<0.0005	0.0333	<0.005	-	-	-
Vanadium	0.129	<0.001	1.29	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
VOC MS (W)							
Benzene	<0.001	<0.001	<0.01	<0.01	-	-	-
Toluene	<0.001	<0.001	<0.01	<0.01	-	-	-
Ethylbenzene	<0.001	<0.001	<0.01	<0.01	-	-	-
p/m-Xylene	<0.001	<0.001	<0.01	<0.01	-	-	-
o-Xylene	<0.001	<0.001	<0.01	<0.01	-	-	-
Total Xylenes	<0.002	<0.002	<0.02	<0.02	-	-	-

Leach Test Information

Date Prepared	20-Jan-2018
pH (pH Units)	10.99
Conductivity (µS/cm)	378.00
Temperature (°C)	19.80
Volume Leachant (Litres)	0.874

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180118-49	**Client Reference:**		**Report Number:**	448302
Location:	Llanwern	**Order Number:**	LLA388	**Superseded Report:**	442943

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.110	**Natural Moisture Content (%)**	21.7
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	82.2
Particle Size <4mm	>95%		

Case	
SDG	180118-49
Lab Sample Number(s)	16889626
Sampled Date	17-Jan-2018
Customer Sample Ref.	W134-08
Depth (m)	0.00 - 0.00

Eluate Analysis	**C_2** Concⁿ in 10:1 eluate (mg/l)		**A_2** 10:1 concⁿ leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Naphthalene (diss.filt)	0.000243	<0.00001	0.00243	<0.0001	-	-	-
Total Ammonia as NH3	<0.2	<0.2	<2	<2	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Acenaphthene (diss.filt)	0.0000778	<0.000005	0.000778	<0.00005	-	-	-
Arsenic	0.00352	<0.0005	0.0352	<0.005	-	-	-
Acenaphthylene (diss.filt)	0.000153	<0.000005	0.00153	<0.00005	-	-	-
Fluoranthene (diss.filt)	0.00077	<0.000005	0.0077	<0.00005	-	-	-
Anthracene (diss.filt)	0.00012	<0.000005	0.0012	<0.00005	-	-	-
Iron	<0.019	<0.019	<0.19	<0.19	-	-	-
Phenanthrene (diss.filt)	0.00065	<0.000005	0.0065	<0.00005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Fluorene (diss.filt)	0.000149	<0.000005	0.00149	<0.00005	-	-	-
Chrysene (diss.filt)	0.000115	<0.000005	0.00115	<0.00005	-	-	-
Pyrene (diss.filt)	0.000742	<0.000005	0.00742	<0.00005	-	-	-
Benzo(a)anthracene (diss.filt)	0.000107	<0.000005	0.00107	<0.00005	-	-	-
Chromium	0.00307	<0.001	0.0307	<0.01	-	-	-
Benzo(b)fluoranthene (diss.filt)	0.0000915	<0.000005	0.000915	<0.00005	-	-	-
Benzo(k)fluoranthene (diss.filt)	0.0000442	<0.000005	0.000442	<0.00005	-	-	-
Benzo(a)pyrene (diss.filt)	0.0000457	<0.000002	0.000457	<0.00002	-	-	-
Copper	0.00527	<0.0003	0.0527	<0.003	-	-	-
Dibenzo(a,h)anthracene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Lead	0.000209	<0.0002	0.00209	<0.002	-	-	-
Benzo(g,h,i)perylene (diss.filt)	0.0000737	<0.000005	0.000737	<0.00005	-	-	-
Indeno(1,2,3-cd)pyrene (diss.filt)	0.000046	<0.000005	0.00046	<0.00005	-	-	-

Leach Test Information

Date Prepared	20-Jan-2018
pH (pH Units)	11.00
Conductivity (µS/cm)	341.00
Temperature (°C)	19.90
Volume Leachant (Litres)	0.880

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180118-49	**Client Reference:**		**Report Number:**	448302
Location:	Llanwern	**Order Number:**	LLA388	**Superseded Report:**	442943

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.110	**Natural Moisture Content (%)**	21.7
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	82.2
Particle Size <4mm	>95%		

Case	
SDG	180118-49
Lab Sample Number(s)	16889626
Sampled Date	17-Jan-2018
Customer Sample Ref.	W134-08
Depth (m)	0.00 - 0.00

Eluate Analysis	**C_2** Concⁿ in 10:1 eluate (mg/l)		**A_2** 10:1 concⁿ leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Manganese	0.00231	<0.001	0.0231	<0.01	-	-	-
PAH 16 EPA Total by GCMS (diss.filt)	0.00343	<0.000082	0.0343	<0.00082	-	-	-
Nickel	0.00166	<0.0004	0.0166	<0.004	-	-	-
Selenium	0.00263	<0.0005	0.0263	<0.005	-	-	-
Vanadium	0.116	<0.001	1.16	<0.01	-	-	-
Zinc	0.00103	<0.001	0.0103	<0.01	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
VOC MS (W)							
Benzene	<0.001	<0.001	<0.01	<0.01	-	-	-
Toluene	<0.001	<0.001	<0.01	<0.01	-	-	-
Ethylbenzene	<0.001	<0.001	<0.01	<0.01	-	-	-
p/m-Xylene	<0.001	<0.001	<0.01	<0.01	-	-	-
o-Xylene	<0.001	<0.001	<0.01	<0.01	-	-	-
Total Xylenes	<0.002	<0.002	<0.02	<0.02	-	-	-

Leach Test Information

Date Prepared	20-Jan-2018
pH (pH Units)	11.00
Conductivity (µS/cm)	341.00
Temperature (°C)	19.90
Volume Leachant (Litres)	0.880

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180118-49	**Client Reference:**		**Report Number:**	448302
Location:	Llanwern	**Order Number:**	LLA388	**Superseded Report:**	442943

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.110	**Natural Moisture Content (%)**	21.8
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	82.1
Particle Size <4mm	>95%		

Case	
SDG	180118-49
Lab Sample Number(s)	16889631
Sampled Date	17-Jan-2018
Customer Sample Ref.	W134-09
Depth (m)	0.00 - 0.00

Eluate Analysis	**C_2** Concⁿ in 10:1 eluate (mg/l)		**A_2** 10:1 concⁿ leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Naphthalene (diss.filt)	0.000661	<0.00001	0.00661	<0.0001	-	-	-
Total Ammonia as NH3	<0.2	<0.2	<2	<2	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Acenaphthene (diss.filt)	0.000226	<0.000005	0.00226	<0.00005	-	-	-
Arsenic	0.00283	<0.0005	0.0283	<0.005	-	-	-
Acenaphthylene (diss.filt)	0.000427	<0.000005	0.00427	<0.00005	-	-	-
Fluoranthene (diss.filt)	0.0007	<0.000005	0.007	<0.00005	-	-	-
Anthracene (diss.filt)	0.000205	<0.000005	0.00205	<0.00005	-	-	-
Iron	<0.019	<0.019	<0.19	<0.19	-	-	-
Phenanthrene (diss.filt)	0.000978	<0.000005	0.00978	<0.00005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Fluorene (diss.filt)	0.000244	<0.000005	0.00244	<0.00005	-	-	-
Chrysene (diss.filt)	0.0000918	<0.000005	0.000918	<0.00005	-	-	-
Pyrene (diss.filt)	0.000568	<0.000005	0.00568	<0.00005	-	-	-
Benzo(a)anthracene (diss.filt)	0.0000576	<0.000005	0.000576	<0.00005	-	-	-
Chromium	0.00341	<0.001	0.0341	<0.01	-	-	-
Benzo(b)fluoranthene (diss.filt)	0.0000476	<0.000005	0.000476	<0.00005	-	-	-
Benzo(k)fluoranthene (diss.filt)	0.0000269	<0.000005	0.000269	<0.00005	-	-	-
Benzo(a)pyrene (diss.filt)	0.0000174	<0.000002	0.000174	<0.00002	-	-	-
Copper	0.00584	<0.0003	0.0584	<0.003	-	-	-
Dibenzo(a,h)anthracene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Benzo(g,h,i)perylene (diss.filt)	0.0000271	<0.000005	0.000271	<0.00005	-	-	-
Indeno(1,2,3-cd)pyrene (diss.filt)	0.0000143	<0.000005	0.000143	<0.00005	-	-	-

Leach Test Information

Date Prepared	20-Jan-2018
pH (pH Units)	10.93
Conductivity (µS/cm)	321.00
Temperature (°C)	19.90
Volume Leachant (Litres)	0.880

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180118-49	**Client Reference:**		**Report Number:**	448302
Location:	Llanwern	**Order Number:**	LLA388	**Superseded Report:**	442943

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.110	**Natural Moisture Content (%)**	21.8
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	82.1
Particle Size <4mm	>95%		

Case	
SDG	180118-49
Lab Sample Number(s)	16889631
Sampled Date	17-Jan-2018
Customer Sample Ref.	W134-09
Depth (m)	0.00 - 0.00

Eluate Analysis	**C_2** Concⁿ in 10:1 eluate (mg/l)		**A_2** 10:1 concⁿ leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Manganese	0.0015	<0.001	0.015	<0.01	-	-	-
PAH 16 EPA Total by GCMS (diss.filt)	0.00429	<0.000082	0.0429	<0.00082	-	-	-
Nickel	0.00146	<0.0004	0.0146	<0.004	-	-	-
Selenium	0.00347	<0.0005	0.0347	<0.005	-	-	-
Vanadium	0.134	<0.001	1.34	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
VOC MS (W)							
Benzene	0.0012	<0.001	0.012	<0.01	-	-	-
Toluene	<0.001	<0.001	<0.01	<0.01	-	-	-
Ethylbenzene	<0.001	<0.001	<0.01	<0.01	-	-	-
p/m-Xylene	<0.001	<0.001	<0.01	<0.01	-	-	-
o-Xylene	<0.001	<0.001	<0.01	<0.01	-	-	-
Total Xylenes	<0.002	<0.002	<0.02	<0.02	-	-	-

Leach Test Information

Date Prepared	20-Jan-2018
pH (pH Units)	10.93
Conductivity (µS/cm)	321.00
Temperature (°C)	19.90
Volume Leachant (Litres)	0.880

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180118-49	**Client Reference:**		**Report Number:**	448302
Location:	Llanwern	**Order Number:**	LLA388	**Superseded Report:**	442943

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.107	**Natural Moisture Content (%)**	19.4
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	83.8
Particle Size <4mm	>95%		

Case	
SDG	180118-49
Lab Sample Number(s)	16889637
Sampled Date	17-Jan-2018
Customer Sample Ref.	W84-03
Depth (m)	0.00 - 0.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Naphthalene (diss.filt)	0.0000165	<0.00001	0.000165	<0.0001	-	-	-
Total Ammonia as NH3	<0.2	<0.2	<2	<2	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Acenaphthene (diss.filt)	0.00000796	<0.000005	0.0000796	<0.00005	-	-	-
Arsenic	0.00414	<0.0005	0.0414	<0.005	-	-	-
Acenaphthylene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene (diss.filt)	0.0000224	<0.000005	0.000224	<0.00005	-	-	-
Anthracene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Iron	0.0205	<0.019	0.205	<0.19	-	-	-
Phenanthrene (diss.filt)	0.0000162	<0.000005	0.000162	<0.00005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Fluorene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene (diss.filt)	0.0000283	<0.000005	0.000283	<0.00005	-	-	-
Benzo(a)anthracene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chromium	0.00107	<0.001	0.0107	<0.01	-	-	-
Benzo(b)fluoranthene (diss.filt)	0.0000116	<0.000005	0.000116	<0.00005	-	-	-
Benzo(k)fluoranthene (diss.filt)	0.00000663	<0.000005	0.0000663	<0.00005	-	-	-
Benzo(a)pyrene (diss.filt)	0.00000379	<0.000002	0.0000379	<0.00002	-	-	-
Copper	0.000702	<0.0003	0.00702	<0.003	-	-	-
Dibenzo(a,h)anthracene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Lead	0.000246	<0.0002	0.00246	<0.002	-	-	-
Benzo(g,h,i)perylene (diss.filt)	0.0000162	<0.000005	0.000162	<0.00005	-	-	-
Indeno(1,2,3-cd)pyrene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-

Leach Test Information

Date Prepared	20-Jan-2018
pH (pH Units)	9.51
Conductivity (µS/cm)	152.00
Temperature (°C)	19.90
Volume Leachant (Litres)	0.883

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180118-49	**Client Reference:**		**Report Number:**	448302
Location:	Llanwern	**Order Number:**	LLA388	**Superseded Report:**	442943

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.107	**Natural Moisture Content (%)**	19.4
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	83.8
Particle Size <4mm	>95%		

Case	
SDG	180118-49
Lab Sample Number(s)	16889637
Sampled Date	17-Jan-2018
Customer Sample Ref.	W84-03
Depth (m)	0.00 - 0.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Manganese	0.00261	<0.001	0.0261	<0.01	-	-	-
PAH 16 EPA Total by GCMS (diss.filt)	0.00013	<0.000082	0.0013	<0.00082	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	0.00292	<0.0005	0.0292	<0.005	-	-	-
Vanadium	0.074	<0.001	0.74	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
VOC MS (W)							
Benzene	<0.001	<0.001	<0.01	<0.01	-	-	-
Toluene	<0.001	<0.001	<0.01	<0.01	-	-	-
Ethylbenzene	<0.001	<0.001	<0.01	<0.01	-	-	-
p/m-Xylene	<0.001	<0.001	<0.01	<0.01	-	-	-
o-Xylene	<0.001	<0.001	<0.01	<0.01	-	-	-
Total Xylenes	<0.002	<0.002	<0.02	<0.02	-	-	-

Leach Test Information

Date Prepared	20-Jan-2018
pH (pH Units)	9.51
Conductivity (µS/cm)	152.00
Temperature (°C)	19.90
Volume Leachant (Litres)	0.883

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180118-49	**Client Reference:**		**Report Number:**	448302
Location:	Llanwern	**Order Number:**	LLA388	**Superseded Report:**	442943

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.115	**Natural Moisture Content (%)**	27
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	78.7
Particle Size <4mm	>95%		

Case	
SDG	180118-49
Lab Sample Number(s)	16889643
Sampled Date	17-Jan-2018
Customer Sample Ref.	W84-04
Depth (m)	0.00 - 0.00

Eluate Analysis	**C_2** Concⁿ in 10:1 eluate (mg/l)		**A_2** 10:1 concⁿ leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Mercury Dissolved (CVAF)	0.0000325	<0.00001	0.000325	<0.0001	-	-	-
Naphthalene (diss.filt)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Ammonia as NH3	<0.2	<0.2	<2	<2	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Acenaphthene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Arsenic	0.0107	<0.0005	0.107	<0.005	-	-	-
Acenaphthylene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene (diss.filt)	0.0000109	<0.000005	0.000109	<0.00005	-	-	-
Anthracene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Iron	0.0899	<0.019	0.899	<0.19	-	-	-
Phenanthrene (diss.filt)	0.0000146	<0.000005	0.000146	<0.00005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Fluorene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene (diss.filt)	0.0000158	<0.000005	0.000158	<0.00005	-	-	-
Pyrene (diss.filt)	0.0000121	<0.000005	0.000121	<0.00005	-	-	-
Benzo(a)anthracene (diss.filt)	0.0000145	<0.000005	0.000145	<0.00005	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Benzo(b)fluoranthene (diss.filt)	0.0000185	<0.000005	0.000185	<0.00005	-	-	-
Benzo(k)fluoranthene (diss.filt)	0.00000982	<0.000005	0.0000982	<0.00005	-	-	-
Benzo(a)pyrene (diss.filt)	0.00000603	<0.000002	0.0000603	<0.00002	-	-	-
Copper	0.00321	<0.0003	0.0321	<0.003	-	-	-
Dibenzo(a,h)anthracene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Lead	0.00115	<0.0002	0.0115	<0.002	-	-	-
Benzo(g,h,i)perylene (diss.filt)	0.0000151	<0.000005	0.000151	<0.00005	-	-	-
Indeno(1,2,3-cd)pyrene (diss.filt)	0.00000697	<0.000005	0.0000697	<0.00005	-	-	-

Leach Test Information

Date Prepared	20-Jan-2018
pH (pH Units)	9.17
Conductivity (µS/cm)	130.00
Temperature (°C)	19.80
Volume Leachant (Litres)	0.876

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180118-49	**Client Reference:**		**Report Number:**	448302
Location:	Llanwern	**Order Number:**	LLA388	**Superseded Report:**	442943

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.115	**Natural Moisture Content (%)**	27
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	78.7
Particle Size <4mm	>95%		

Case	
SDG	180118-49
Lab Sample Number(s)	16889643
Sampled Date	17-Jan-2018
Customer Sample Ref.	W84-04
Depth (m)	0.00 - 0.00

Eluate Analysis	**C_2** Concⁿ in 10:1 eluate (mg/l)		**A_2** 10:1 concⁿ leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Manganese	0.00594	<0.001	0.0594	<0.01	-	-	-
PAH 16 EPA Total by GCMS (diss.filt)	0.000124	<0.000082	0.00124	<0.00082	-	-	-
Nickel	0.000477	<0.0004	0.00477	<0.004	-	-	-
Selenium	0.00224	<0.0005	0.0224	<0.005	-	-	-
Vanadium	0.0519	<0.001	0.519	<0.01	-	-	-
Zinc	0.00354	<0.001	0.0354	<0.01	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
VOC MS (W)							
Benzene	<0.001	<0.001	<0.01	<0.01	-	-	-
Toluene	<0.001	<0.001	<0.01	<0.01	-	-	-
Ethylbenzene	<0.001	<0.001	<0.01	<0.01	-	-	-
p/m-Xylene	<0.001	<0.001	<0.01	<0.01	-	-	-
o-Xylene	<0.001	<0.001	<0.01	<0.01	-	-	-
Total Xylenes	<0.002	<0.002	<0.02	<0.02	-	-	-

Leach Test Information

Date Prepared	20-Jan-2018
pH (pH Units)	9.17
Conductivity (µS/cm)	130.00
Temperature (°C)	19.80
Volume Leachant (Litres)	0.876

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180118-49	**Client Reference:**		**Report Number:**	448302
Location:	Llanwern	**Order Number:**	LLA388	**Superseded Report:**	442943

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.107	**Natural Moisture Content (%)**	18.9
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	84.1
Particle Size <4mm	>95%		

Case	
SDG	180118-49
Lab Sample Number(s)	16889648
Sampled Date	17-Jan-2018
Customer Sample Ref.	W84-05
Depth (m)	0.00 - 0.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Naphthalene (diss.filt)	0.0000156	<0.00001	0.000156	<0.0001	-	-	-
Total Ammonia as NH3	<0.2	<0.2	<2	<2	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Acenaphthene (diss.filt)	0.0000096	<0.000005	0.000096	<0.00005	-	-	-
Arsenic	0.00316	<0.0005	0.0316	<0.005	-	-	-
Acenaphthylene (diss.filt)	0.00000814	<0.000005	0.0000814	<0.00005	-	-	-
Fluoranthene (diss.filt)	0.000321	<0.000005	0.00321	<0.00005	-	-	-
Anthracene (diss.filt)	0.0000274	<0.000005	0.000274	<0.00005	-	-	-
Iron	<0.019	<0.019	<0.19	<0.19	-	-	-
Phenanthrene (diss.filt)	0.000263	<0.000005	0.00263	<0.00005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Fluorene (diss.filt)	0.0000309	<0.000005	0.000309	<0.00005	-	-	-
Chrysene (diss.filt)	0.0000203	<0.000005	0.000203	<0.00005	-	-	-
Pyrene (diss.filt)	0.000296	<0.000005	0.00296	<0.00005	-	-	-
Benzo(a)anthracene (diss.filt)	0.0000146	<0.000005	0.000146	<0.00005	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Benzo(b)fluoranthene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene (diss.filt)	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Copper	0.000787	<0.0003	0.00787	<0.003	-	-	-
Dibenzo(a,h)anthracene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Benzo(g,h,i)perylene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(1,2,3-cd)pyrene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-

Leach Test Information

Date Prepared	20-Jan-2018
pH (pH Units)	8.99
Conductivity (µS/cm)	215.00
Temperature (°C)	19.70
Volume Leachant (Litres)	0.883

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180118-49	**Client Reference:**		**Report Number:**	448302
Location:	Llanwern	**Order Number:**	LLA388	**Superseded Report:**	442943

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.107	**Natural Moisture Content (%)**	18.9
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	84.1
Particle Size <4mm	>95%		

Case	
SDG	180118-49
Lab Sample Number(s)	16889648
Sampled Date	17-Jan-2018
Customer Sample Ref.	W84-05
Depth (m)	0.00 - 0.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Manganese	0.00453	<0.001	0.0453	<0.01	-	-	-
PAH 16 EPA Total by GCMS (diss.filt)	0.00101	<0.000082	0.0101	<0.00082	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	0.00358	<0.0005	0.0358	<0.005	-	-	-
Vanadium	0.0479	<0.001	0.479	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
VOC MS (W)							
Benzene	<0.001	<0.001	<0.01	<0.01	-	-	-
Toluene	<0.001	<0.001	<0.01	<0.01	-	-	-
Ethylbenzene	<0.001	<0.001	<0.01	<0.01	-	-	-
p/m-Xylene	<0.001	<0.001	<0.01	<0.01	-	-	-
o-Xylene	<0.001	<0.001	<0.01	<0.01	-	-	-
Total Xylenes	<0.002	<0.002	<0.02	<0.02	-	-	-

Leach Test Information

Date Prepared	20-Jan-2018
pH (pH Units)	8.99
Conductivity (µS/cm)	215.00
Temperature (°C)	19.70
Volume Leachant (Litres)	0.883

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180118-49	**Client Reference:**		**Report Number:**	448302
Location:	Llanwern	**Order Number:**	LLA388	**Superseded Report:**	442943

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.109	**Natural Moisture Content (%)**	21
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	82.7
Particle Size <4mm	>95%		

Case	
SDG	180118-49
Lab Sample Number(s)	16889652
Sampled Date	17-Jan-2018
Customer Sample Ref.	W84-06
Depth (m)	0.00 - 0.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Naphthalene (diss.filt)	0.0000163	<0.00001	0.000163	<0.0001	-	-	-
Total Ammonia as NH3	<0.2	<0.2	<2	<2	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Acenaphthene (diss.filt)	0.00000563	<0.000005	0.0000563	<0.00005	-	-	-
Arsenic	0.00351	<0.0005	0.0351	<0.005	-	-	-
Acenaphthylene (diss.filt)	0.00000522	<0.000005	0.0000522	<0.00005	-	-	-
Fluoranthene (diss.filt)	0.0000295	<0.000005	0.000295	<0.00005	-	-	-
Anthracene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Iron	<0.019	<0.019	<0.19	<0.19	-	-	-
Phenanthrene (diss.filt)	0.0000196	<0.000005	0.000196	<0.00005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Fluorene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene (diss.filt)	0.0000245	<0.000005	0.000245	<0.00005	-	-	-
Benzo(a)anthracene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Benzo(b)fluoranthene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene (diss.filt)	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Copper	0.00186	<0.0003	0.0186	<0.003	-	-	-
Dibenzo(a,h)anthracene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Benzo(g,h,i)perylene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(1,2,3-cd)pyrene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-

Leach Test Information

Date Prepared	20-Jan-2018
pH (pH Units)	8.10
Conductivity (µS/cm)	634.00
Temperature (°C)	19.80
Volume Leachant (Litres)	0.881

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180118-49	**Client Reference:**		**Report Number:**	448302
Location:	Llanwern	**Order Number:**	LLA388	**Superseded Report:**	442943

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.109	**Natural Moisture Content (%)**	21
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	82.7
Particle Size <4mm	>95%		

Case	
SDG	180118-49
Lab Sample Number(s)	16889652
Sampled Date	17-Jan-2018
Customer Sample Ref.	W84-06
Depth (m)	0.00 - 0.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Manganese	0.00652	<0.001	0.0652	<0.01	-	-	-
PAH 16 EPA Total by GCMS (diss.filt)	0.000101	<0.000082	0.00101	<0.00082	-	-	-
Nickel	0.000416	<0.0004	0.00416	<0.004	-	-	-
Selenium	0.00273	<0.0005	0.0273	<0.005	-	-	-
Vanadium	0.0289	<0.001	0.289	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
VOC MS (W)							
Benzene	<0.001	<0.001	<0.01	<0.01	-	-	-
Toluene	<0.001	<0.001	<0.01	<0.01	-	-	-
Ethylbenzene	<0.001	<0.001	<0.01	<0.01	-	-	-
p/m-Xylene	<0.001	<0.001	<0.01	<0.01	-	-	-
o-Xylene	<0.001	<0.001	<0.01	<0.01	-	-	-
Total Xylenes	<0.002	<0.002	<0.02	<0.02	-	-	-

Leach Test Information

Date Prepared	20-Jan-2018
pH (pH Units)	8.10
Conductivity (µS/cm)	634.00
Temperature (°C)	19.80
Volume Leachant (Litres)	0.881

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180118-49	**Client Reference:**		**Report Number:**	448302
Location:	Llanwern	**Order Number:**	LLA388	**Superseded Report:**	442943

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.102	**Natural Moisture Content (%)**	13.6
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	88
Particle Size <4mm	>95%		

Case	
SDG	180118-49
Lab Sample Number(s)	16889656
Sampled Date	17-Jan-2018
Customer Sample Ref.	W84-07
Depth (m)	0.00 - 0.00

Eluate Analysis	**C_2** Concⁿ in 10:1 eluate (mg/l)		**A_2** 10:1 concⁿ leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Naphthalene (diss.filt)	0.0000126	<0.00001	0.000126	<0.0001	-	-	-
Total Ammonia as NH3	<0.2	<0.2	<2	<2	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Acenaphthene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Arsenic	0.00527	<0.0005	0.0527	<0.005	-	-	-
Acenaphthylene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene (diss.filt)	0.0000265	<0.000005	0.000265	<0.00005	-	-	-
Anthracene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Iron	<0.019	<0.019	<0.19	<0.19	-	-	-
Phenanthrene (diss.filt)	0.0000437	<0.000005	0.000437	<0.00005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Fluorene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene (diss.filt)	0.00000628	<0.000005	0.0000628	<0.00005	-	-	-
Pyrene (diss.filt)	0.000019	<0.000005	0.00019	<0.00005	-	-	-
Benzo(a)anthracene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Benzo(b)fluoranthene (diss.filt)	0.00000571	<0.000005	0.0000571	<0.00005	-	-	-
Benzo(k)fluoranthene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene (diss.filt)	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Copper	0.00203	<0.0003	0.0203	<0.003	-	-	-
Dibenzo(a,h)anthracene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Benzo(g,h,i)perylene (diss.filt)	0.0000054	<0.000005	0.000054	<0.00005	-	-	-
Indeno(1,2,3-cd)pyrene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-

Leach Test Information

Date Prepared	24-Jan-2018
pH (pH Units)	9.33
Conductivity (µS/cm)	233.00
Temperature (°C)	18.30
Volume Leachant (Litres)	0.888

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180118-49	**Client Reference:**		**Report Number:**	448302
Location:	Llanwern	**Order Number:**	LLA388	**Superseded Report:**	442943

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.102	**Natural Moisture Content (%)**	13.6
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	88
Particle Size <4mm	>95%		

Case	
SDG	180118-49
Lab Sample Number(s)	16889656
Sampled Date	17-Jan-2018
Customer Sample Ref.	W84-07
Depth (m)	0.00 - 0.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Manganese	0.00286	<0.001	0.0286	<0.01	-	-	-
PAH 16 EPA Total by GCMS (diss.filt)	0.000119	<0.000082	0.00119	<0.00082	-	-	-
Nickel	0.000628	<0.0004	0.00628	<0.004	-	-	-
Selenium	0.00216	<0.0005	0.0216	<0.005	-	-	-
Vanadium	0.0287	<0.001	0.287	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
VOC MS (W)							
Benzene	<0.001	<0.001	<0.01	<0.01	-	-	-
Toluene	<0.001	<0.001	<0.01	<0.01	-	-	-
Ethylbenzene	<0.001	<0.001	<0.01	<0.01	-	-	-
p/m-Xylene	<0.001	<0.001	<0.01	<0.01	-	-	-
o-Xylene	<0.001	<0.001	<0.01	<0.01	-	-	-
Total Xylenes	<0.002	<0.002	<0.02	<0.02	-	-	-

Leach Test Information

Date Prepared	24-Jan-2018
pH (pH Units)	9.33
Conductivity (µS/cm)	233.00
Temperature (°C)	18.30
Volume Leachant (Litres)	0.888

Mcerts Certification does not apply to leachates

15/03/2018 17:10:21

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CERTIFICATE OF ANALYSIS

SDG:	180118-49	**Client Reference:**		**Report Number:**	448302
Location:	Llanwern	**Order Number:**	LLA388	**Superseded Report:**	442943

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.106	**Natural Moisture Content (%)**	17.3
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	85.3
Particle Size <4mm	>95%		

Case	
SDG	180118-49
Lab Sample Number(s)	16889665
Sampled Date	17-Jan-2018
Customer Sample Ref.	W84-08
Depth (m)	0.00 - 0.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Naphthalene (diss.filt)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Ammonia as NH3	<0.2	<0.2	<2	<2	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Acenaphthene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Arsenic	0.00346	<0.0005	0.0346	<0.005	-	-	-
Acenaphthylene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene (diss.filt)	0.000011	<0.000005	0.00011	<0.00005	-	-	-
Anthracene (diss.filt)	0.00000551	<0.000005	0.0000551	<0.00005	-	-	-
Iron	0.0419	<0.019	0.419	<0.19	-	-	-
Phenanthrene (diss.filt)	0.0000101	<0.000005	0.000101	<0.00005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Fluorene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene (diss.filt)	0.0000163	<0.000005	0.000163	<0.00005	-	-	-
Pyrene (diss.filt)	0.0000157	<0.000005	0.000157	<0.00005	-	-	-
Benzo(a)anthracene (diss.filt)	0.0000127	<0.000005	0.000127	<0.00005	-	-	-
Chromium	0.00194	<0.001	0.0194	<0.01	-	-	-
Benzo(b)fluoranthene (diss.filt)	0.000018	<0.000005	0.00018	<0.00005	-	-	-
Benzo(k)fluoranthene (diss.filt)	0.00000845	<0.000005	0.0000845	<0.00005	-	-	-
Benzo(a)pyrene (diss.filt)	0.0000053	<0.000002	0.000053	<0.00002	-	-	-
Copper	0.00105	<0.0003	0.0105	<0.003	-	-	-
Dibenzo(a,h)anthracene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Lead	0.000611	<0.0002	0.00611	<0.002	-	-	-
Benzo(g,h,i)perylene (diss.filt)	0.0000122	<0.000005	0.000122	<0.00005	-	-	-
Indeno(1,2,3-cd)pyrene (diss.filt)	0.00000616	<0.000005	0.0000616	<0.00005	-	-	-

Leach Test Information

Date Prepared	20-Jan-2018
pH (pH Units)	9.09
Conductivity (µS/cm)	116.00
Temperature (°C)	19.90
Volume Leachant (Litres)	0.884

Mcerts Certification does not apply to leachates

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17:09:56 15/03/2018

CERTIFICATE OF ANALYSIS

SDG:	180118-49	**Client Reference:**		**Report Number:**	448302
Location:	Llanwern	**Order Number:**	LLA388	**Superseded Report:**	442943

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.106	**Natural Moisture Content (%)**	17.3
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	85.3
Particle Size <4mm	>95%		

Case	
SDG	180118-49
Lab Sample Number(s)	16889665
Sampled Date	17-Jan-2018
Customer Sample Ref.	W84-08
Depth (m)	0.00 - 0.00

Eluate Analysis	**C_2** Concⁿ in 10:1 eluate (mg/l)		**A_2** 10:1 concⁿ leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Manganese	0.00402	<0.001	0.0402	<0.01	-	-	-
PAH 16 EPA Total by GCMS (diss.filt)	0.000121	<0.000082	0.00121	<0.00082	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	0.00266	<0.0005	0.0266	<0.005	-	-	-
Vanadium	0.0596	<0.001	0.596	<0.01	-	-	-
Zinc	0.00123	<0.001	0.0123	<0.01	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
VOC MS (W)							
Benzene	<0.001	<0.001	<0.01	<0.01	-	-	-
Toluene	<0.001	<0.001	<0.01	<0.01	-	-	-
Ethylbenzene	<0.001	<0.001	<0.01	<0.01	-	-	-
p/m-Xylene	<0.001	<0.001	<0.01	<0.01	-	-	-
o-Xylene	<0.001	<0.001	<0.01	<0.01	-	-	-
Total Xylenes	<0.002	<0.002	<0.02	<0.02	-	-	-

Leach Test Information

Date Prepared	20-Jan-2018
pH (pH Units)	9.09
Conductivity (µS/cm)	116.00
Temperature (°C)	19.90
Volume Leachant (Litres)	0.884

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180118-49	**Client Reference:**		**Report Number:**	448302
Location:	Llanwern	**Order Number:**	LLA388	**Superseded Report:**	442943

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.106	**Natural Moisture Content (%)**	18
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	84.8
Particle Size <4mm	>95%		

Case	
SDG	180118-49
Lab Sample Number(s)	16889669
Sampled Date	17-Jan-2018
Customer Sample Ref.	W84-09
Depth (m)	0.00 - 0.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Naphthalene (diss.filt)	0.0000121	<0.00001	0.000121	<0.0001	-	-	-
Total Ammonia as NH3	<0.2	<0.2	<2	<2	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Acenaphthene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Arsenic	0.00393	<0.0005	0.0393	<0.005	-	-	-
Acenaphthylene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene (diss.filt)	0.0000141	<0.000005	0.000141	<0.00005	-	-	-
Anthracene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Iron	0.0442	<0.019	0.442	<0.19	-	-	-
Phenanthrene (diss.filt)	0.0000212	<0.000005	0.000212	<0.00005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Fluorene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene (diss.filt)	0.0000129	<0.000005	0.000129	<0.00005	-	-	-
Pyrene (diss.filt)	0.0000141	<0.000005	0.000141	<0.00005	-	-	-
Benzo(a)anthracene (diss.filt)	0.0000167	<0.000005	0.000167	<0.00005	-	-	-
Chromium	0.00154	<0.001	0.0154	<0.01	-	-	-
Benzo(b)fluoranthene (diss.filt)	0.0000145	<0.000005	0.000145	<0.00005	-	-	-
Benzo(k)fluoranthene (diss.filt)	0.00000701	<0.000005	0.0000701	<0.00005	-	-	-
Benzo(a)pyrene (diss.filt)	0.00000515	<0.000002	0.0000515	<0.00002	-	-	-
Copper	0.00231	<0.0003	0.0231	<0.003	-	-	-
Dibenzo(a,h)anthracene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Lead	0.00092	<0.0002	0.0092	<0.002	-	-	-
Benzo(g,h,i)perylene (diss.filt)	0.000015	<0.000005	0.00015	<0.00005	-	-	-
Indeno(1,2,3-cd)pyrene (diss.filt)	0.00000657	<0.000005	0.0000657	<0.00005	-	-	-

Leach Test Information

Date Prepared	22-Jan-2018
pH (pH Units)	9.21
Conductivity (µS/cm)	114.00
Temperature (°C)	19.80
Volume Leachant (Litres)	0.884

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180118-49	**Client Reference:**		**Report Number:**	448302
Location:	Llanwern	**Order Number:**	LLA388	**Superseded Report:**	442943

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.106	**Natural Moisture Content (%)**	18
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	84.8
Particle Size <4mm	>95%		

Case	
SDG	180118-49
Lab Sample Number(s)	16889669
Sampled Date	17-Jan-2018
Customer Sample Ref.	W84-09
Depth (m)	0.00 - 0.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Manganese	0.00503	<0.001	0.0503	<0.01	-	-	-
PAH 16 EPA Total by GCMS (diss.filt)	0.000139	<0.000082	0.00139	<0.00082	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	0.00211	<0.0005	0.0211	<0.005	-	-	-
Vanadium	0.0633	<0.001	0.633	<0.01	-	-	-
Zinc	0.00206	<0.001	0.0206	<0.01	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
VOC MS (W)							
Benzene	<0.001	<0.001	<0.01	<0.01	-	-	-
Toluene	<0.001	<0.001	<0.01	<0.01	-	-	-
Ethylbenzene	<0.001	<0.001	<0.01	<0.01	-	-	-
p/m-Xylene	<0.001	<0.001	<0.01	<0.01	-	-	-
o-Xylene	<0.001	<0.001	<0.01	<0.01	-	-	-
Total Xylenes	<0.002	<0.002	<0.02	<0.02	-	-	-

Leach Test Information

Date Prepared	22-Jan-2018
pH (pH Units)	9.21
Conductivity (µS/cm)	114.00
Temperature (°C)	19.80
Volume Leachant (Litres)	0.884

Mcerts Certification does not apply to leachates

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Table of Results - Appendix

Method No	Reference	Description
ASB_PREP		
PM001		Preparation of Samples for Metals Analysis
PM024	Modified BS 1377	Soil preparation including homogenisation, moisture screens of soils for Asbestos Containing Material
PM115		Leaching Procedure for CEN One Stage Leach Test 2:1 & 10:1 1 Step
SUB		Subcontracted Test
TM024	Method 4500A & B, AWWA/APHA, 20th Ed., 1999	Determination of Exchangeable Ammonium and Ammoniacal Nitrogen as N by titration on solids
TM048	HSG 248, Asbestos: The analysts' guide for sampling, analysis and clearance procedures	Identification of Asbestos in Bulk Material
TM061	Method for the Determination of EPH,Massachusetts Dept.of EP, 1998	Determination of Extractable Petroleum Hydrocarbons by GC-FID (C10-C40)
TM062 (S)	National Grid Property Holdings Methods for the Collection & Analysis of Samples from National Grid Sites version 1 Sec 3.9	Determination of Phenols in Soils by HPLC
TM089	Modified: US EPA Methods 8020 & 602	Determination of Gasoline Range Hydrocarbons (GRO) and BTEX (MTBE) compounds by Headspace GC-FID (C4-C12)
TM099	BS 2690: Part 7:1968 / BS 6068: Part2.11:1984	Determination of Ammonium in Water Samples using the Kone Analyser
TM132	In - house Method	ELTRA CS800 Operators Guide
TM133	BS 1377: Part 3 1990;BS 6068-2.5	Determination of pH in Soil and Water using the GLpH pH Meter
TM152	Method 3125B, AWWA/APHA, 20th Ed., 1999	Analysis of Aqueous Samples by ICP-MS
TM153	Method 4500A,B,C, I, M AWWA/APHA, 20th Ed., 1999	Determination of Total Cyanide, Free (Easily Liberatable) Cyanide and Thiocyanate using the Skalar SANS+ System Segmented Flow Analyser
TM173	Analysis of Petroleum Hydrocarbons in Environmental Media – Total Petroleum Hydrocarbon Criteria	Determination of Speciated Extractable Petroleum Hydrocarbons in Soils by GC-FID
TM174	Analysis of Petroleum Hydrocarbons in Environmental Media – Total Petroleum Hydrocarbon Criteria	Determination of Speciated Extractable Petroleum Hydrocarbons in Waters by GC-FID
TM178	Modified: US EPA Method 8100	Determination of Polynuclear Aromatic Hydrocarbons (PAH) by GC-MS in Waters
TM181	US EPA Method 6010B	Determination of Routine Metals in Soil by iCap 6500 Duo ICP-OES
TM183	BS EN 23506:2002, (BS 6068-2.74:2002) ISBN 0 580 38924 3	Determination of Trace Level Mercury in Waters and Leachates by PSA Cold Vapour Atomic Fluorescence Spectrometry
TM208	Modified: US EPA Method 8260b & 624	Determination of Volatile Organic Compounds by Headspace / GC-MS in Waters
TM218	Determination of PAH by GCMS Microwave extraction	The determination of PAH in soil samples by microwave extraction and GC-MS
TM221	Inductively Coupled Plasma - Atomic Emission Spectroscopy. An Atlas of Spectral Information: Winge, Fassel, Peterson and Floyd	Determination of Acid extractable Sulphate in Soils by IRIS Emission Spectrometer
TM224	US EPA Method 6010B	Determination of Alkaline Metals by iCap 6500 Duo ICP-OES
TM227	Standard methods for the examination of waters and wastewaters 20th Edition, AWWA/APHA Method 4500.	Determination of Total Cyanide, Free (Easily Liberatable) Cyanide and Thiocyanate
TM228	US EPA Method 6010B	Determination of Major Cations in Water by iCap 6500 Duo ICP-OES
TM243		Mixed Anions In Soils By Kone
TM245	By GC-FID	Determination of GRO by Headspace in waters
TM256	The measurement of Electrical Conductivity and the Laboratory determination of pH Value of Natural, Treated and Wastewaters. HMSO, 1978. ISBN 011 751428 4.	Determination of pH in Water and Leachate using the GLpH pH Meter
TM304	HSE Contract research Report no 83/1996	Asbestos Quantification in Soil: Fibres identified by morphology only

NA = not applicable.

Chemical testing (unless subcontracted) performed at ALS Environmental Hawarden (Method codes TM) or ALS Environmental Aberdeen (Method codes S).

CERTIFICATE OF ANALYSIS

SDG:	180118-49	**Client Reference:**		**Report Number:**	448302
Location:	Llanwern	**Order Number:**	LLA388	**Superseded Report:**	442943

Test Completion Dates

Lab Sample No(s)	16889538	16889542	16889548	16889554	16889559	16889564	16889568	16889572	16889576	16889531
Customer Sample Ref.	W83-01	W83-02	W83-03	W83-04	W83-05	W83-06	W83-07	W83-08	W83-09	W84-01
AGS Ref.										
Depth	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
Alkali Metals by iCap-OES (Soil)	01-Feb-2018		01-Feb-2018		02-Feb-2018		01-Feb-2018		01-Feb-2018	01-Feb-2018
Ammoniacal Nitrogen	27-Jan-2018	26-Jan-2018	26-Jan-2018	26-Jan-2018	26-Jan-2018	25-Jan-2018	26-Jan-2018	26-Jan-2018	26-Jan-2018	25-Jan-2018
Ammonium Soil by Titration	30-Jan-2018	30-Jan-2018	30-Jan-2018	30-Jan-2018	30-Jan-2018	30-Jan-2018	30-Jan-2018	30-Jan-2018	30-Jan-2018	30-Jan-2018
Anions by Kone (soil)	25-Jan-2018		25-Jan-2018		25-Jan-2018		25-Jan-2018		25-Jan-2018	25-Jan-2018
Asbestos ID in Solid Samples	08-Mar-2018		08-Mar-2018		07-Mar-2018		08-Mar-2018		07-Mar-2018	08-Mar-2018
Asbestos Quantification - Full	15-Mar-2018		08-Mar-2018				08-Mar-2018		08-Mar-2018	08-Mar-2018
CEN 10:1 Leachate (1 Stage)	22-Jan-2018	22-Jan-2018	22-Jan-2018	20-Jan-2018	22-Jan-2018	20-Jan-2018	22-Jan-2018	22-Jan-2018	22-Jan-2018	20-Jan-2018
CEN Readings	25-Jan-2018	26-Jan-2018	26-Jan-2018	25-Jan-2018	26-Jan-2018	26-Jan-2018	26-Jan-2018	26-Jan-2018	26-Jan-2018	26-Jan-2018
Cyanide Comp/Free/Total/Thiocyanate	25-Jan-2018	26-Jan-2018	26-Jan-2018	25-Jan-2018	26-Jan-2018	25-Jan-2018	26-Jan-2018	26-Jan-2018	26-Jan-2018	25-Jan-2018
Dissolved Metals by ICP-MS	30-Jan-2018	30-Jan-2018	30-Jan-2018	31-Jan-2018	30-Jan-2018	30-Jan-2018	30-Jan-2018	30-Jan-2018	30-Jan-2018	29-Jan-2018
EPH CWG (Aliphatic) Filtered GC (W)	26-Jan-2018	29-Jan-2018	29-Jan-2018	26-Jan-2018	29-Jan-2018	26-Jan-2018	29-Jan-2018	29-Jan-2018	29-Jan-2018	26-Jan-2018
EPH CWG (Aliphatic) GC (S)	23-Jan-2018	25-Jan-2018	25-Jan-2018	23-Jan-2018	25-Jan-2018	23-Jan-2018	25-Jan-2018	23-Jan-2018	23-Jan-2018	23-Jan-2018
EPH CWG (Aromatic) Filtered GC (W)	26-Jan-2018	29-Jan-2018	29-Jan-2018	26-Jan-2018	29-Jan-2018	26-Jan-2018	29-Jan-2018	29-Jan-2018	29-Jan-2018	26-Jan-2018
EPH CWG (Aromatic) GC (S)	23-Jan-2018	25-Jan-2018	25-Jan-2018	23-Jan-2018	25-Jan-2018	23-Jan-2018	25-Jan-2018	23-Jan-2018	23-Jan-2018	23-Jan-2018
GRO by GC-FID (S)	25-Jan-2018	25-Jan-2018	25-Jan-2018	25-Jan-2018	25-Jan-2018	25-Jan-2018	25-Jan-2018	25-Jan-2018	25-Jan-2018	25-Jan-2018
GRO by GC-FID (W)	25-Jan-2018	25-Jan-2018	25-Jan-2018	25-Jan-2018	25-Jan-2018	25-Jan-2018	25-Jan-2018	25-Jan-2018	25-Jan-2018	25-Jan-2018
Mercury Dissolved	26-Jan-2018	26-Jan-2018	26-Jan-2018	26-Jan-2018	26-Jan-2018	24-Jan-2018	26-Jan-2018	26-Jan-2018	26-Jan-2018	24-Jan-2018
Metals by iCap-OES Dissolved (W)	28-Jan-2018	28-Jan-2018	28-Jan-2018	28-Jan-2018	28-Jan-2018	28-Jan-2018	28-Jan-2018	28-Jan-2018	28-Jan-2018	28-Jan-2018
Metals in solid samples by OES	02-Feb-2018	29-Jan-2018	02-Feb-2018	29-Jan-2018	02-Feb-2018	02-Feb-2018	01-Feb-2018	05-Feb-2018	02-Feb-2018	02-Feb-2018
PAH by GCMS	25-Jan-2018	25-Jan-2018	29-Jan-2018	25-Jan-2018	25-Jan-2018	25-Jan-2018	25-Jan-2018	25-Jan-2018	25-Jan-2018	25-Jan-2018
PAH in waters by GC-MS (diss.filt)	26-Jan-2018	29-Jan-2018	29-Jan-2018	26-Jan-2018	29-Jan-2018	25-Jan-2018	29-Jan-2018	29-Jan-2018	29-Jan-2018	25-Jan-2018
pH	22-Jan-2018	24-Jan-2018	23-Jan-2018	24-Jan-2018	22-Jan-2018	22-Jan-2018	24-Jan-2018	23-Jan-2018	24-Jan-2018	22-Jan-2018
pH Value of Filtered Water	24-Jan-2018	24-Jan-2018	24-Jan-2018	24-Jan-2018	24-Jan-2018	24-Jan-2018	24-Jan-2018	24-Jan-2018	24-Jan-2018	24-Jan-2018
Phenols by HPLC (S)	24-Jan-2018	24-Jan-2018	24-Jan-2018	25-Jan-2018	24-Jan-2018	22-Jan-2018	25-Jan-2018	25-Jan-2018	24-Jan-2018	22-Jan-2018
Sample description	20-Jan-2018	20-Jan-2018	21-Jan-2018	20-Jan-2018	21-Jan-2018	19-Jan-2018	21-Jan-2018	21-Jan-2018	21-Jan-2018	19-Jan-2018
Total Organic Carbon	29-Jan-2018	29-Jan-2018	29-Jan-2018	29-Jan-2018	29-Jan-2018	29-Jan-2018	29-Jan-2018	29-Jan-2018	29-Jan-2018	29-Jan-2018
Total Sulphate	26-Jan-2018		28-Jan-2018		26-Jan-2018		28-Jan-2018		28-Jan-2018	28-Jan-2018
Total Sulphur	29-Jan-2018		26-Jan-2018		26-Jan-2018		26-Jan-2018		26-Jan-2018	26-Jan-2018
TPH CWG Filtered (W)	26-Jan-2018	29-Jan-2018	29-Jan-2018	26-Jan-2018	29-Jan-2018	26-Jan-2018	29-Jan-2018	29-Jan-2018	29-Jan-2018	26-Jan-2018
TPH CWG GC (S)	25-Jan-2018	25-Jan-2018	25-Jan-2018	25-Jan-2018	25-Jan-2018	25-Jan-2018	25-Jan-2018	25-Jan-2018	25-Jan-2018	25-Jan-2018
VOC MS (W)	24-Jan-2018	24-Jan-2018	24-Jan-2018	24-Jan-2018	24-Jan-2018	24-Jan-2018	24-Jan-2018	24-Jan-2018	24-Jan-2018	24-Jan-2018

Lab Sample No(s)	16889585	16889637	16889643	16889648	16889652	16889656	16889665	16889669	16889580	16889590
Customer Sample Ref.	W84-02	W84-03	W84-04	W84-05	W84-06	W84-07	W84-08	W84-09	W134-01	W134-02
AGS Ref.										
Depth	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
Alkali Metals by iCap-OES (Soil)		01-Feb-2018		01-Feb-2018		01-Feb-2018		01-Feb-2018	01-Feb-2018	
Ammoniacal Nitrogen	27-Jan-2018	25-Jan-2018	27-Jan-2018	25-Jan-2018	25-Jan-2018	26-Jan-2018	27-Jan-2018	26-Jan-2018	25-Jan-2018	26-Jan-2018
Ammonium Soil by Titration	30-Jan-2018	30-Jan-2018	30-Jan-2018	30-Jan-2018	30-Jan-2018	30-Jan-2018	30-Jan-2018	30-Jan-2018	30-Jan-2018	30-Jan-2018
Anions by Kone (soil)		25-Jan-2018		24-Jan-2018		25-Jan-2018		25-Jan-2018	25-Jan-2018	
Asbestos ID in Solid Samples		08-Mar-2018		08-Mar-2018		08-Mar-2018		08-Mar-2018	06-Mar-2018	
Asbestos Quantification - Full		14-Mar-2018		08-Mar-2018		15-Mar-2018				
Calorific Value (S)*									02-Feb-2018	02-Feb-2018
CEN 10:1 Leachate (1 Stage)	22-Jan-2018	20-Jan-2018	20-Jan-2018	20-Jan-2018	20-Jan-2018	24-Jan-2018	20-Jan-2018	22-Jan-2018	20-Jan-2018	20-Jan-2018
CEN Readings	25-Jan-2018	25-Jan-2018	25-Jan-2018	26-Jan-2018	25-Jan-2018	25-Jan-2018	25-Jan-2018	25-Jan-2018	25-Jan-2018	25-Jan-2018
Cyanide Comp/Free/Total/Thiocyanate	25-Jan-2018	25-Jan-2018	25-Jan-2018	25-Jan-2018	25-Jan-2018	26-Jan-2018	25-Jan-2018	26-Jan-2018	25-Jan-2018	25-Jan-2018
Dissolved Metals by ICP-MS	30-Jan-2018	29-Jan-2018	29-Jan-2018	29-Jan-2018	29-Jan-2018	30-Jan-2018	30-Jan-2018	30-Jan-2018	29-Jan-2018	29-Jan-2018
EPH CWG (Aliphatic) Filtered GC (W)	26-Jan-2018	26-Jan-2018	26-Jan-2018	26-Jan-2018	26-Jan-2018	29-Jan-2018	26-Jan-2018	29-Jan-2018	26-Jan-2018	26-Jan-2018
EPH CWG (Aliphatic) GC (S)	25-Jan-2018	23-Jan-2018	23-Jan-2018	23-Jan-2018	26-Jan-2018	25-Jan-2018	23-Jan-2018	24-Jan-2018	24-Jan-2018	25-Jan-2018
EPH CWG (Aromatic) Filtered GC (W)	26-Jan-2018	26-Jan-2018	26-Jan-2018	26-Jan-2018	26-Jan-2018	29-Jan-2018	26-Jan-2018	29-Jan-2018	26-Jan-2018	26-Jan-2018
EPH CWG (Aromatic) GC (S)	25-Jan-2018	23-Jan-2018	23-Jan-2018	23-Jan-2018	26-Jan-2018	25-Jan-2018	23-Jan-2018	24-Jan-2018	24-Jan-2018	25-Jan-2018
GRO by GC-FID (S)	25-Jan-2018	25-Jan-2018	25-Jan-2018	25-Jan-2018	25-Jan-2018	25-Jan-2018	25-Jan-2018	25-Jan-2018	25-Jan-2018	25-Jan-2018
GRO by GC-FID (W)	25-Jan-2018	25-Jan-2018	25-Jan-2018	25-Jan-2018	25-Jan-2018	26-Jan-2018	25-Jan-2018	25-Jan-2018	25-Jan-2018	25-Jan-2018
Mercury Dissolved	26-Jan-2018	24-Jan-2018	24-Jan-2018	24-Jan-2018	24-Jan-2018	26-Jan-2018	26-Jan-2018	26-Jan-2018	26-Jan-2018	26-Jan-2018
Metals by iCap-OES Dissolved (W)	28-Jan-2018	28-Jan-2018	29-Jan-2018	28-Jan-2018	28-Jan-2018	28-Jan-2018	28-Jan-2018	28-Jan-2018	29-Jan-2018	29-Jan-2018
Metals in solid samples by OES	29-Jan-2018	01-Feb-2018	29-Jan-2018	02-Feb-2018	02-Feb-2018	02-Feb-2018	29-Jan-2018	02-Feb-2018	01-Feb-2018	29-Jan-2018
PAH by GCMS	25-Jan-2018	25-Jan-2018	25-Jan-2018	25-Jan-2018	25-Jan-2018	25-Jan-2018	25-Jan-2018	25-Jan-2018	25-Jan-2018	25-Jan-2018
PAH in waters by GC-MS (diss.filt)	26-Jan-2018	25-Jan-2018	26-Jan-2018	25-Jan-2018	25-Jan-2018	29-Jan-2018	26-Jan-2018	29-Jan-2018	26-Jan-2018	26-Jan-2018
pH	22-Jan-2018	23-Jan-2018	23-Jan-2018	24-Jan-2018	24-Jan-2018	22-Jan-2018	24-Jan-2018	24-Jan-2018	23-Jan-2018	23-Jan-2018
pH Value of Filtered Water	24-Jan-2018	24-Jan-2018	24-Jan-2018	24-Jan-2018	24-Jan-2018	26-Jan-2018	24-Jan-2018	24-Jan-2018	24-Jan-2018	24-Jan-2018
Phenols by HPLC (S)	25-Jan-2018	24-Jan-2018	25-Jan-2018	24-Jan-2018	25-Jan-2018	25-Jan-2018	25-Jan-2018	25-Jan-2018	24-Jan-2018	25-Jan-2018
Sample description	19-Jan-2018	19-Jan-2018	19-Jan-2018	19-Jan-2018	19-Jan-2018	21-Jan-2018	20-Jan-2018	21-Jan-2018	19-Jan-2018	19-Jan-2018
Total Organic Carbon	29-Jan-2018	29-Jan-2018	29-Jan-2018	29-Jan-2018	29-Jan-2018	29-Jan-2018	29-Jan-2018	29-Jan-2018	29-Jan-2018	29-Jan-2018
Total Sulphate		26-Jan-2018		30-Jan-2018		26-Jan-2018		28-Jan-2018	26-Jan-2018	
Total Sulphur		24-Jan-2018		29-Jan-2018		26-Jan-2018		26-Jan-2018	24-Jan-2018	
TPH CWG Filtered (W)	26-Jan-2018	26-Jan-2018	26-Jan-2018	26-Jan-2018	26-Jan-2018	29-Jan-2018	26-Jan-2018	29-Jan-2018	26-Jan-2018	26-Jan-2018
TPH CWG GC (S)	25-Jan-2018	25-Jan-2018	25-Jan-2018	25-Jan-2018	26-Jan-2018	25-Jan-2018	25-Jan-2018	25-Jan-2018	25-Jan-2018	25-Jan-2018
VOC MS (W)	24-Jan-2018	24-Jan-2018	24-Jan-2018	24-Jan-2018	24-Jan-2018	25-Jan-2018	24-Jan-2018	24-Jan-2018	24-Jan-2018	24-Jan-2018

Validated

CERTIFICATE OF ANALYSIS

SDG:	180118-49	**Client Reference:**		**Report Number:**	448302
Location:	Llanwern	**Order Number:**	LLA388	**Superseded Report:**	442943

Lab Sample No(s)	16889597	16889602	16889610	16889615	16889621	16889626	16889631
Customer Sample Ref.	W134-03	W134-04	W134-05	W134-06	W134-07	W134-08	W134-09
AGS Ref.							
Depth	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
Alkali Metals by iCap-OES (Soil)	01-Feb-2018		01-Feb-2018		01-Feb-2018		02-Feb-2018
Ammoniacal Nitrogen	27-Jan-2018	27-Jan-2018	27-Jan-2018	27-Jan-2018	25-Jan-2018	26-Jan-2018	26-Jan-2018
Ammonium Soil by Titration	30-Jan-2018	30-Jan-2018	30-Jan-2018	30-Jan-2018	30-Jan-2018	30-Jan-2018	30-Jan-2018
Anions by Kone (soil)	25-Jan-2018		25-Jan-2018		25-Jan-2018		25-Jan-2018
Asbestos ID in Solid Samples	08-Mar-2018		08-Mar-2018		07-Mar-2018		08-Mar-2018
Asbestos Quantification - Full			15-Mar-2018		08-Mar-2018		
Calorific Value (S)*	02-Feb-2018	02-Feb-2018	02-Feb-2018	02-Feb-2018	02-Feb-2018	02-Feb-2018	02-Feb-2018
CEN 10:1 Leachate (1 Stage)	20-Jan-2018	20-Jan-2018	20-Jan-2018	20-Jan-2018	20-Jan-2018	20-Jan-2018	20-Jan-2018
CEN Readings	25-Jan-2018	25-Jan-2018	25-Jan-2018	25-Jan-2018	26-Jan-2018	25-Jan-2018	25-Jan-2018
Cyanide Comp/Free/Total/Thiocyanate	25-Jan-2018	25-Jan-2018	25-Jan-2018	25-Jan-2018	25-Jan-2018	25-Jan-2018	25-Jan-2018
Dissolved Metals by ICP-MS	30-Jan-2018	31-Jan-2018	31-Jan-2018	31-Jan-2018	29-Jan-2018	31-Jan-2018	30-Jan-2018
EPH CWG (Aliphatic) Filtered GC (W)	26-Jan-2018	26-Jan-2018	26-Jan-2018	26-Jan-2018	26-Jan-2018	26-Jan-2018	26-Jan-2018
EPH CWG (Aliphatic) GC (S)	23-Jan-2018	26-Jan-2018	23-Jan-2018	23-Jan-2018	25-Jan-2018	25-Jan-2018	23-Jan-2018
EPH CWG (Aromatic) Filtered GC (W)	26-Jan-2018	26-Jan-2018	26-Jan-2018	26-Jan-2018	26-Jan-2018	26-Jan-2018	26-Jan-2018
EPH CWG (Aromatic) GC (S)	23-Jan-2018	26-Jan-2018	23-Jan-2018	23-Jan-2018	25-Jan-2018	25-Jan-2018	23-Jan-2018
GRO by GC-FID (S)	25-Jan-2018	25-Jan-2018	25-Jan-2018	25-Jan-2018	25-Jan-2018	25-Jan-2018	25-Jan-2018
GRO by GC-FID (W)	25-Jan-2018	29-Jan-2018	25-Jan-2018	26-Jan-2018	29-Jan-2018	29-Jan-2018	25-Jan-2018
Mercury Dissolved	26-Jan-2018	26-Jan-2018	26-Jan-2018	26-Jan-2018	26-Jan-2018	26-Jan-2018	26-Jan-2018
Metals by iCap-OES Dissolved (W)	29-Jan-2018	28-Jan-2018	28-Jan-2018	28-Jan-2018	28-Jan-2018	28-Jan-2018	29-Jan-2018
Metals in solid samples by OES	01-Feb-2018	29-Jan-2018	02-Feb-2018	29-Jan-2018	01-Feb-2018	02-Feb-2018	01-Feb-2018
PAH by GCMS	25-Jan-2018	25-Jan-2018	25-Jan-2018	25-Jan-2018	25-Jan-2018	25-Jan-2018	25-Jan-2018
PAH in waters by GC-MS (diss.filt)	25-Jan-2018	26-Jan-2018	26-Jan-2018	26-Jan-2018	26-Jan-2018	25-Jan-2018	26-Jan-2018
pH	23-Jan-2018	23-Jan-2018	24-Jan-2018	23-Jan-2018	24-Jan-2018	23-Jan-2018	24-Jan-2018
pH Value of Filtered Water	24-Jan-2018	24-Jan-2018	24-Jan-2018	24-Jan-2018	24-Jan-2018	24-Jan-2018	24-Jan-2018
Phenols by HPLC (S)	24-Jan-2018	24-Jan-2018	24-Jan-2018	24-Jan-2018	25-Jan-2018	24-Jan-2018	25-Jan-2018
Sample description	19-Jan-2018	19-Jan-2018	19-Jan-2018	19-Jan-2018	19-Jan-2018	19-Jan-2018	19-Jan-2018
Total Organic Carbon	29-Jan-2018	29-Jan-2018	29-Jan-2018	29-Jan-2018	29-Jan-2018	29-Jan-2018	29-Jan-2018
Total Sulphate	26-Jan-2018		26-Jan-2018		26-Jan-2018		28-Jan-2018
Total Sulphur	29-Jan-2018		24-Jan-2018		26-Jan-2018		26-Jan-2018
TPH CWG Filtered (W)	26-Jan-2018	29-Jan-2018	26-Jan-2018	26-Jan-2018	29-Jan-2018	29-Jan-2018	26-Jan-2018
TPH CWG GC (S)	25-Jan-2018	26-Jan-2018	25-Jan-2018	25-Jan-2018	25-Jan-2018	25-Jan-2018	25-Jan-2018
VOC MS (W)	24-Jan-2018	29-Jan-2018	24-Jan-2018	24-Jan-2018	29-Jan-2018	24-Jan-2018	24-Jan-2018

CERTIFICATE OF ANALYSIS

Work Order	: **PR1805654**	Issue Date	: 01-Feb-2018
Customer	: **ALS Life Sciences Ltd**	Laboratory	: ALS Czech Republic, s.r.o.
Contact	: Hawarden Subcontracting	Contact	: Client Service
Address	: Unit 7-8 Hawarden Business Park Manor Road, Hawarden CH5 3US Deeside United Kingdom	Address	: Na Harfe 336/9 Prague 9 - Vysocany 190 00 Czech Republic
E-mail	: HawardenSubcon@alsglobal.com	E-mail	: customer.support@alsglobal.com
Telephone	: ----	Telephone	: +420 226 226 228
Facsimile	: ----	Facsimile	: +420 284 081 635
Project	: 180118-49	Page	: 1 of 3
Order number	: ----	Date Samples Received	: 22-Jan-2018
C-O-C number	: ----	Quote number	: PR2017ALSAL-GB0002 (CZ-251-17-0022)
Site	: ----	Date of test	: 22-Jan-2018 - 01-Feb-2018
Sampled by	: Client	QC Level	: ALS CR Standard Quality Control Schedule

General Comments

This report shall not be reproduced except in full, without prior written approval from the laboratory.
The laboratory declares that the test results relate only to the listed samples.

Responsible for accuracy

Testing Laboratory No. 1163
Accredited by CAI according to
CSN EN ISO/IEC 17025:2005

Signatories		*Position*
Zdeněk Jirák		Environmental Business Unit Manager

Analytical Results

Sub-Matrix: SOLID	Client sample ID	16895917 W134-01		16895991 W134-02		16895939 W134-03	
	Laboratory sample ID	PR1805654-001		PR1805654-002		PR1805654-003	
	Client sampling date / time	17-Jan-2018 00:00		17-Jan-2018 00:00		17-Jan-2018 00:00	
Parameter	Method / LOR / Unit	Result	MU	Result	MU	Result	MU
Physical Parameters							
Gross Calorific Value in Dry Matter Q(V/gr/d)	I-CV-CALS / 0.50 / MJ/kg DW	7.10	± 11.0%	5.62	± 11.6%	6.58	± 11.2%
Gross Calorific Value Original Q(V/gr/ar)	I-CV-CALS / 0.50 / MJ/kg	6.10	± 11.4%	4.78	± 12.2%	5.50	± 11.7%
Net Calorific Value in Dry Matter Q(V/net/d)	I-CV-CALS / 0.50 / MJ/kg DW	6.84	± 11.1%	5.41	± 11.7%	6.35	± 11.3%
Net Calorific Value Original Q(V/net/ar)	I-CV-CALS / 0.50 / MJ/kg	5.55	± 11.7%	4.26	± 12.7%	4.93	± 12.1%
Water Analytical M(ad)	I-WA-GR / 0.50 / %	1.46	± 30.3%	1.60	± 28.9%	1.31	± 32.4%
Water Gross M(ex)	I-WG-GR / 0.50 / %	12.8	± 20.2%	13.5	± 20.2%	15.3	± 20.1%
Water Total M(ar)	I-WT-CC / 0.50 / %	14.1	----	14.9	----	16.4	----

Sub-Matrix: SOLID	Client sample ID	16895915 W134-04		16895949 W134-05		16895783 W134-06	
	Laboratory sample ID	PR1805654-004		PR1805654-005		PR1805654-006	
	Client sampling date / time	17-Jan-2018 00:00		17-Jan-2018 00:00		17-Jan-2018 00:00	
Parameter	Method / LOR / Unit	Result	MU	Result	MU	Result	MU
Physical Parameters							
Gross Calorific Value in Dry Matter Q(V/gr/d)	I-CV-CALS / 0.50 / MJ/kg DW	7.00	± 11.1%	6.16	± 11.4%	7.43	± 11.0%
Gross Calorific Value Original Q(V/gr/ar)	I-CV-CALS / 0.50 / MJ/kg	6.15	± 11.4%	5.41	± 11.7%	6.24	± 11.3%
Net Calorific Value in Dry Matter Q(V/net/d)	I-CV-CALS / 0.50 / MJ/kg DW	6.76	± 11.1%	5.94	± 11.5%	7.18	± 11.0%
Net Calorific Value Original Q(V/net/ar)	I-CV-CALS / 0.50 / MJ/kg	5.67	± 11.6%	4.94	± 12.1%	5.66	± 11.6%
Water Analytical M(ad)	I-WA-GR / 0.50 / %	1.29	± 32.7%	1.35	± 31.8%	1.20	± 34.2%
Water Gross M(ex)	I-WG-GR / 0.50 / %	11.0	± 20.2%	11.0	± 20.2%	15.0	± 20.1%
Water Total M(ar)	I-WT-CC / 0.50 / %	12.1	----	12.2	----	16.0	----

Sub-Matrix: SOLID	Client sample ID	16895746 W134-07		16895813 W134-08		16895751 W134-09	
	Laboratory sample ID	PR1805654-007		PR1805654-008		PR1805654-009	
	Client sampling date / time	17-Jan-2018 00:00		17-Jan-2018 00:00		17-Jan-2018 00:00	
Parameter	Method / LOR / Unit	Result	MU	Result	MU	Result	MU
Physical Parameters							
Gross Calorific Value in Dry Matter Q(V/gr/d)	I-CV-CALS / 0.50 / MJ/kg DW	6.11	± 11.4%	6.93	± 11.1%	8.23	± 10.8%
Gross Calorific Value Original Q(V/gr/ar)	I-CV-CALS / 0.50 / MJ/kg	5.08	± 12.0%	5.74	± 11.6%	7.02	± 11.1%
Net Calorific Value in Dry Matter Q(V/net/d)	I-CV-CALS / 0.50 / MJ/kg DW	5.75	± 11.6%	6.68	± 11.2%	8.01	± 10.8%
Net Calorific Value Original Q(V/net/ar)	I-CV-CALS / 0.50 / MJ/kg	4.40	± 12.5%	5.13	± 11.9%	6.49	± 11.2%
Water Analytical M(ad)	I-WA-GR / 0.50 / %	1.46	± 30.3%	1.35	± 31.8%	1.16	± 35.0%
Water Gross M(ex)	I-WG-GR / 0.50 / %	15.5	± 20.1%	16.1	± 20.1%	13.7	± 20.1%
Water Total M(ar)	I-WT-CC / 0.50 / %	16.8	----	17.2	----	14.7	----

If no sampling time is provided, the sampling time will default 00:00 on the date of sampling. If no sampling date is provided, delivery date in brackets without a time component will be displayed instead. Measurement uncertainty is expressed as expanded measurement uncertainty with coverage factor k = 2, representing 95% confidence level.

Key: LOR = Limit of reporting; MU = Measurement Uncertainty

The end of result part of the certificate of analysis

Brief Method Summaries

Analytical Methods	*Method Descriptions*
Location of test performance: Bendlova 1687/7 Ceska Lipa Czech Republic 470 01	
I-CV-CALS	CZ_SOP_D06_07_124.A (CSN ISO 1928, CSN EN 14918, CSN EN 15400, CSN EN 15170, CSN DIN 51900-1, CSN DIN 51900-2, CSN DIN 51900-3) Determination of gross calorific value by calorimetric method and calculation of net calorific value and emission factor by calculation from measured values.
I-WA-GR	CZ_SOP_D06_07_041 (CSN 44 1377, CSN EN ISO 18134-3, CSN EN 15414-3) Determination of analytical water and gross water by gravimetry and determination of total water by calculation from measured values.
I-WG-GR	CZ_SOP_D06_07_041 (CSN 44 1377, CSN EN ISO 18134-1, CSN P CEN/TS 15414-1) Determination of analytical water and gross water by gravimetry and determination of total water by calculation from measured values.
I-WT-CC	CZ_SOP_D06_07_041 (CSN 44 1377, CSN EN ISO 18134-1, CSN EN ISO 18134-3, CSN P CEN/TS 15414-1, CSN EN 15414-3) Determination of analytical water and gross water by gravimetry and determination of total water by calculation from measured values.

Preparation Methods	*Method Descriptions*
Location of test performance: Bendlova 1687/7 Ceska Lipa Czech Republic 470 01	
I-PPBURN	CZ_SOP_D06_07_124.A (CSN ISO 1928, CSN EN 14918, CSN EN 15400, CSN EN 15170) Determination of gross calorific value by calorimetric method and calculation of net calorific value.
* S-PPHOM.07	CZ_SOP_D06_07_P01 Preparation of solid samples for analysis (crushing, milling and pulverizing).
* S-PPHOM0.3	CZ_SOP_D06_07_P01 Preparation of solid samples for analysis (crushing, milling and pulverizing).

A `*` symbol preceding any method indicates laboratory or subcontractor non-accredited test. In the case when a procedure belonging to an accredited method was used for non-accredited matrix, would apply that the reported results are non-accredited. Please refer to General Comment section on front page for information. If the report contains subcontracted analysis, those are made in a subcontracted laboratory outside the laboratories ALS Czech Republic, s.r.o.
The calculation methods of summation parameters are available on request in the client service.

Appendix

General

1. Results are expressed on a dry weight basis (dried at 35ºC) for all soil analyses except for the following: NRA and CEN Leach tests, flash point LOI, pH, ammonium as NH4 by the BRE method, VOC TICs and SVOC TICs.

2. Samples will be run in duplicate upon request, but an additional charge may be incurred.

3. If sufficient sample is received a sub sample will be retained free of charge for 30 days after analysis is completed (e-mailed) for all sample types unless the sample is destroyed on testing. The prepared soil sub sample that is analysed for asbestos will be retained for a period of 6 months after the analysis date. All bulk samples will be retained for a period of 6 months after the analysis date. All samples received and not scheduled will be disposed of one month after the date of receipt unless we are instructed to the contrary. Once the initial period has expired, a storage charge will be applied for each month or part thereof until the client cancels the request for sample storage. ALS reserve the right to charge for samples received and stored but not analysed.

4. With respect to turnaround, we will always endeavour to meet client requirements wherever possible, but turnaround times cannot be absolutely guaranteed due to so many variables beyond our control.

5. We take responsibility for any test performed by sub-contractors (marked with an asterisk). We endeavour to use UKAS/MCERTS Accredited Laboratories, who either complete a quality questionnaire or are audited by ourselves. For some determinands there are no UKAS/MCERTS Accredited Laboratories, in this instance a laboratory with a known track record will be utilised.

6. When requested, the individual sub sample scheduled will be analysed in house for the presence of asbestos fibres and asbestos containing material by our documented in house method TM048 based on HSG 248 (2005), which is accredited to ISO17025. If a specific asbestos fibre type is not found this will be reported as “Not detected”. If no asbestos fibre types are found all will be reported as “Not detected” and the sub sample analysed deemed to be clear of asbestos. If an asbestos fibre type is found it will be reported as detected (for each fibre type found). Testing can be carried out on asbestos positive samples, but, due to Health and Safety considerations, may be replaced by alternative tests or reported as No Determination Possible (NDP). The quantity of asbestos present is not determined unless specifically requested.

7. If no separate volatile sample is supplied by the client, or if a headspace or sediment is present in the volatile sample, the integrity of the data may be compromised. This will be flagged up as an invalid VOC on the test schedule and the result marked as deviating on the test certificate.

8. If appropriate preserved bottles are not received preservation will take place on receipt. However, the integrity of the data may be compromised.

9. NDP - No determination possible due to insufficient/unsuitable sample.

10. Metals in water are performed on a filtered sample, and therefore represent dissolved metals - total metals must be requested separately.

11. Results relate only to the items tested.

12. LoDs (Limit of Detection) for wet tests reported on a dry weight basis are not corrected for moisture content.

13. **Surrogate recoveries** - Surrogates are added to your sample to monitor recovery of the test requested. A % recovery is reported, results are not corrected for the recovery measured. Typical recoveries for organics tests are 70-130%, they are generally wider for volatiles analysis, 50-150%. Recoveries in soils are affected by organic rich or clay rich matrices. Waters can be affected by remediation fluids or high amounts of sediment. Test results are only ever reported if all of the associated quality checks pass; it is assumed that all recoveries outside of the values above are due to matrix affect.

14. **Product analyses** - Organic analyses on products can only be semi-quantitative due to the matrix effects and high dilution factors employed.

15. Phenols monohydric by HPLC include phenol, cresols (2-Methylphenol, 3-Methylphenol and 4-Methylphenol) and Xylenols (2,3 Dimethylphenol, 2,4 Dimethylphenol, 2,5 Dimethylphenol, 2,6 Dimethylphenol, 3,4 Dimethyphenol, 3,5 Dimethylphenol).

16. Total of 5 speciated phenols by HPLC includes Phenol, 2,3,5-Trimethyl Phenol, 2-Isopropylphenol, Cresols and Xylenols (as detailed in 15).

17. Stones/debris are not routinely removed. We always endeavour to take a representative sub sample from the received sample.

18. In certain circumstances the method detection limit may be elevated due to the sample being outside the calibration range. Other factors that may contribute to this include possible interferences. In both cases the sample would be diluted which would cause the method detection limit to be raised.

19. Mercury results quoted on soils will not include volatile mercury as the analysis is performed on a dried and crushed sample.

20. For leachate preparations other than Zero Headspace Extraction (ZHE) volatile loss may occur.

21. For the BSEN 12457-3 two batch process to allow the cumulative release to be calculated, the volume of the leachate produced is measured and filtered for all tests. We therefore cannot carry out any unfiltered analysis. The tests affected include volatiles GCFID/GCMS and all subcontracted analysis.

22. We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample. Other coarse granular material such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

23. Analysis and identification of specific compounds using GCFID is by retention time only, and we routinely calibrate and quantify for benzene, toluene, ethylbenzenes and xylenes (BTEX). For total volatiles in the C5-C12 range, the total area of the chromatogram is integrated and expressed as ug/kg or ug/l. Although this analysis is commonly used for the quantification of gasoline range organics (GRO), the system will also detect other compounds such as chlorinated solvents, and this may lead to a falsely high result with respect to hydrocarbons only. It is not possible to specifically identify these non-hydrocarbons, as standards are not routinely run for any other compounds, and for more definitive identification, volatiles by GCMS should be utilised.

24. **Tentatively Identified Compounds (TICs)** are non-target peaks in VOC and SVOC analysis. All non-target peaks detected with a concentration above the LoD are subjected to a mass spectral library search. Non-target peaks with a library search confidence of >75% are reported based on the best mass spectral library match. When a non-target peak with a library search confidence of <75% is detected it is reported as “mixed hydrocarbons”. Non-target compounds identified from the scan data are semi-quantified relative to one of the deuterated internal standards, under the same chromatographic conditions as the target compounds. This result is reported as a semi-quantitative value and reported as Tentatively Identified Compounds (TICs). TICs are outside the scope of UKAS accreditation and are not moisture corrected.

Sample Deviations

If a sample is classed as deviated then the associated results may be compromised.

1	**Container with Headspace provided for volatiles analysis**
2	**Incorrect container received**
3	**Deviation from method**
4	**Holding time exceeded before sample received**
5	**Samples exceeded holding time before presevation was performed**
§	**Sampled on date not provided**
♦	**Sample holding time exceeded in laboratory**
@	**Sample holding time exceeded due to sampled on date**
&	**Sample Holding Time exceeded - Late arrival of instructions.**

Asbestos

Identification of Asbestos in Bulk Materials & Soils

The results for identification of asbestos in bulk materials are obtained from supplied bulk materials which have been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

The results for identification of asbestos in soils are obtained from a homogenised sub sample which has been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

Asbestos Type	Common Name
Chrysotile	White Asbestos
Amosite	Brown Asbestos
Crocidolite	Blue Asbestos
Fibrous Actinolite	-
Fibrous Anthophyllite	-
Fibrous Tremolite	-

Visual Estimation Of Fibre Content

Estimation of fibre content is not permitted as part of our UKAS accredited test other than: - Trace - Where only one or two asbestos fibres were identified.

Further guidance on typical asbestos fibre content of manufactured products can be found in HSG 264.

The identification of asbestos containing materials and soils falls within our schedule of tests for which we hold UKAS accreditation, however opinions, interpretations and all other information contained in the report are outside the scope of UKAS accreditation.

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Hawarden
Deeside
CH5 3US
Tel: (01244) 528700
Fax: (01244) 528701
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Website: www.alsenvironmental.co.uk

Atkins Global Ltd
Project Jonah site office
Llan Coed House
Suite 24
Coed Darcy
Llandarcy
SA10 6HJ

Attention: John Fitzgerald

CERTIFICATE OF ANALYSIS

Date:	19 February 2018
Customer:	H_ATKINS_LDC
Sample Delivery Group (SDG):	180206-15
Your Reference:	
Location:	Llanwern
Report No:	445153

We received 21 samples on Tuesday February 06, 2018 and 21 of these samples were scheduled for analysis which was completed on Monday February 19, 2018. Accredited laboratory tests are defined within the report, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation.

Should this report require incorporation into client reports, it must be used in its entirety and not simply with the data sections alone.

Chemical testing (unless subcontracted) performed at ALS Environmental Hawarden (Method codes TM) or ALS Environmental Aberdeen (Method codes S).

Approved By:

Sonia McWhan
Operations Manager

ALS Life Sciences Limited. Registered Office: Units 7 & 8 Hawarden Business Park, Manor Road, Hawarden, Deeside, CH5 3US. Registered in England and Wales No. 4057291.

CERTIFICATE OF ANALYSIS

SDG:	180206-15	**Client Reference:**		**Report Number:**	445153
Location:	Llanwern	**Order Number:**	LLA396	**Superseded Report:**	

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
16995970	W134-10		0.00 - 0.00	05/02/2018
16996026	W134-11		0.00 - 0.00	05/02/2018
16996040	W134-12		0.00 - 0.00	05/02/2018
16996045	W134-13		0.00 - 0.00	05/02/2018
16996058	W134-14		0.00 - 0.00	05/02/2018
16996072	W134-15		0.00 - 0.00	05/02/2018
16996077	W134-16		0.00 - 0.00	05/02/2018
16996083	W134-17		0.00 - 0.00	05/02/2018
16996087	W134-18		0.00 - 0.00	05/02/2018
16995977	W134-19		0.00 - 0.00	05/02/2018
16995981	W134-20		0.00 - 0.00	05/02/2018
16995985	W134-21		0.00 - 0.00	05/02/2018
16995989	W134-22		0.00 - 0.00	05/02/2018
16995993	W134-23		0.00 - 0.00	05/02/2018
16996000	W134-24		0.00 - 0.00	05/02/2018
16996005	W134-25		0.00 - 0.00	05/02/2018
16996009	W134-26		0.00 - 0.00	05/02/2018
16996015	W134-27		0.00 - 0.00	05/02/2018
16996019	W134-28		0.00 - 0.00	05/02/2018
16996031	W134-29		0.00 - 0.00	05/02/2018
16996036	W134-30		0.00 - 0.00	05/02/2018

Maximum Sample/Coolbox Temperature (°C) : **4.3**

ISO5667-3 Water quality - Sampling - Part3 -
During Transportation samples shall be stored in a cooling device capable of maintaining a temperature of (5±3)°C.

ALS have data which show that a cool box with 4 frozen icepacks is capable of maintaining pre-chilled samples at a temperature of (5±3)°C for a period of up to 24hrs.

Only received samples which have had analysis scheduled will be shown on the following pages.

Validated

CERTIFICATE OF ANALYSIS

SDG:	180206-15	**Client Reference:**		**Report Number:**	445153
Location:	Llanwern	**Order Number:**	LLA396	**Superseded Report:**	

Results Legend

X Test

N No Determination Possible

Sample Types -
S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

			Lab Sample No(s)																			
			16995970			16996026			16996040			16996045			16996058			16996072			16996077	
			Customer Sample Reference																			
			W134-10			W134-11			W134-12			W134-13			W134-14			W134-15			W134-16	
			AGS Reference																			
			Depth (m)																			
			0.00 - 0.00			0.00 - 0.00			0.00 - 0.00			0.00 - 0.00			0.00 - 0.00			0.00 - 0.00			0.00 - 0.00	
			Container																			
			1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	
			Sample Type																			
			S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
Alkali Metals by iCap-OES (Soil)	All	NDPs: 0 Tests: 11		X						X						X						
Ammoniacal Nitrogen	All	NDPs: 0 Tests: 21	X			X			X			X			X			X			X	
Ammonium Soil by Titration	All	NDPs: 0 Tests: 21		X			X			X			X			X			X			
Anions by Kone (soil)	All	NDPs: 0 Tests: 11		X						X						X						
Asbestos ID in Solid Samples	All	NDPs: 0 Tests: 10	X						X						X							
Asbestos Quantification - Full	All	NDPs: 0 Tests: 2																			X	
CEN Readings	All	NDPs: 0 Tests: 22	X			X			X			X			X			X			X	
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 42	X	X		X	X		X	X		X	X		X	X		X	X		X	
Dissolved Metals by ICP-MS	All	NDPs: 0 Tests: 21	X			X			X			X			X			X			X	
EPH CWG (Aliphatic) Filtered GC (W)	All	NDPs: 0 Tests: 21	X			X			X			X			X			X			X	
EPH CWG (Aliphatic) GC (S)	All	NDPs: 0 Tests: 21		X			X			X			X			X			X			
EPH CWG (Aromatic) Filtered GC (W)	All	NDPs: 0 Tests: 21	X			X			X			X			X			X			X	
EPH CWG (Aromatic) GC (S)	All	NDPs: 0 Tests: 21		X			X			X			X			X			X			
GRO by GC-FID (S)	All	NDPs: 0 Tests: 21			X			X			X			X			X			X		
GRO by GC-FID (W)	All	NDPs: 0 Tests: 21	X			X			X			X			X			X			X	

16995993	W134-23		0.00 - 0.00	1kg TUB	S			x						x		x		x			x				x
16995989	W134-22		0.00 - 0.00	60g VOC (ALE215)	S																			x	
				250g Amber Jar (ALE210)	S		x			x		x					x					x				
				1kg TUB	S			x				x			x		x		x			x				x
16995985	W134-21		0.00 - 0.00	60g VOC (ALE215)	S																			x	
				250g Amber Jar (ALE210)	S					x																
				1kg TUB	S			x							x		x		x			x				x
16995981	W134-20		0.00 - 0.00	60g VOC (ALE215)	S																			x	
				250g Amber Jar (ALE210)	S		x			x		x					x					x				
				1kg TUB	S			x				x			x		x		x			x				x
16995977	W134-19		0.00 - 0.00	60g VOC (ALE215)	S																			x	
				250g Amber Jar (ALE210)	S					x																
				1kg TUB	S			x							x		x		x			x				x
16996087	W134-18		0.00 - 0.00	60g VOC (ALE215)	S																			x	
				250g Amber Jar (ALE210)	S		x			x		x					x					x				
				1kg TUB	S			x				x			x		x		x			x				x
16996083	W134-17		0.00 - 0.00	60g VOC (ALE215)	S																			x	
				250g Amber Jar (ALE210)	S					x																
				1kg TUB	S			x							x		x		x			x				x
16996077	W134-16		0.00 - 0.00	60g VOC (ALE215)	S																			x	
				250g Amber Jar (ALE210)	S		x			x		x					x					x				

Validated

CERTIFICATE OF ANALYSIS

SDG:	180206-15	**Client Reference:**		**Report Number:**	445153
Location:	Llanwern	**Order Number:**	LLA396	**Superseded Report:**	

Results Legend

- X — Test
- N — No Determination Possible

Sample Types -
S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

Lab Sample No(s)			16995970			16996026			16996040			16996045			16996058			16996072			16996077
Customer Sample Reference			W134-10			W134-11			W134-12			W134-13			W134-14			W134-15			W134-16
AGS Reference																					
Depth (m)			0.00 - 0.00			0.00 - 0.00			0.00 - 0.00			0.00 - 0.00			0.00 - 0.00			0.00 - 0.00			0.00 - 0.00
Container			1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB
Sample Type			S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
Mercury Dissolved	All	NDPs: 0 Tests: 21	X			X			X			X			X			X			X
Metals by iCap-OES Dissolved (W)	All	NDPs: 0 Tests: 21	X			X			X			X			X			X			X
Metals in solid samples by OES	All	NDPs: 0 Tests: 21		X			X			X			X			X			X		
PAH by GCMS	All	NDPs: 0 Tests: 21		X			X			X			X			X			X		
PAH in waters by GC-MS (diss.filt)	All	NDPs: 0 Tests: 21	X			X			X			X			X			X			X
pH	All	NDPs: 0 Tests: 21		X			X			X			X			X			X		
pH Value of Filtered Water	All	NDPs: 0 Tests: 21	X			X			X			X			X			X			X
Phenols by HPLC (S)	All	NDPs: 0 Tests: 21		X			X			X			X			X			X		
Sample description	All	NDPs: 0 Tests: 21		X			X			X			X			X			X		
Total Organic Carbon	All	NDPs: 0 Tests: 21		X			X			X			X			X			X		
Total Sulphate	All	NDPs: 0 Tests: 11		X						X						X					
Total Sulphur	All	NDPs: 0 Tests: 11		X						X						X					
TPH CWG Filtered (W)	All	NDPs: 0 Tests: 21	X			X			X			X			X			X			X
TPH CWG GC (S)	All	NDPs: 0 Tests: 21		X			X			X			X			X			X		
VOC MS (W)	All	NDPs: 0 Tests: 21	X			X			X			X			X			X			X

17:13:27 19/02/2018

16995993	W134-23		0.00 - 0.00	1kg TUB	S	x	x			x		x						x		x			
16995989	W134-22		0.00 - 0.00	60g VOC (ALE215)	S																		
				250g Amber Jar (ALE210)	S			x	x		x		x	x	x	x	x		x				
				1kg TUB	S	x	x			x		x						x		x			
16995985	W134-21		0.00 - 0.00	60g VOC (ALE215)	S																		
				250g Amber Jar (ALE210)	S			x	x		x		x	x	x					x			
				1kg TUB	S	x	x			x		x						x		x			
16995981	W134-20		0.00 - 0.00	60g VOC (ALE215)	S																		
				250g Amber Jar (ALE210)	S			x	x		x		x	x	x	x	x		x				
				1kg TUB	S	x	x			x		x						x		x			
16995977	W134-19		0.00 - 0.00	60g VOC (ALE215)	S																		
				250g Amber Jar (ALE210)	S			x	x		x		x	x	x					x			
				1kg TUB	S	x	x			x		x						x		x			
16996087	W134-18		0.00 - 0.00	60g VOC (ALE215)	S																		
				250g Amber Jar (ALE210)	S			x	x		x		x	x	x	x	x		x				
				1kg TUB	S	x	x			x		x						x		x			
16996083	W134-17		0.00 - 0.00	60g VOC (ALE215)	S																		
				250g Amber Jar (ALE210)	S			x	x		x		x	x	x					x			
				1kg TUB	S	x	x			x		x						x		x			
16996077	W134-16		0.00 - 0.00	60g VOC (ALE215)	S																		
				250g Amber Jar (ALE210)	S			x	x		x		x	x	x	x	x		x				

Validated

CERTIFICATE OF ANALYSIS

SDG:	180206-15	**Client Reference:**		**Report Number:**	445153
Location:	Llanwern	**Order Number:**	LLA396	**Superseded Report:**	

Results Legend

X Test

N No Determination Possible

Sample Types -

S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

Lab Sample No(s)			16995993		16996000			16996005			16996009			16996015				16996019			16996031
Customer Sample Reference			W134-23		W134-24			W134-25			W134-26			W134-27				W134-28			W134-29
AGS Reference																					
Depth (m)			0.00 - 0.00		0.00 - 0.00			0.00 - 0.00			0.00 - 0.00			0.00 - 0.00				0.00 - 0.00			0.00 - 0.00
Container			250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	60ml red top tub	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB
Sample Type			S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
Alkali Metals by iCap-OES (Soil)	All	NDPs: 0 Tests: 11				X						X							X		
Ammoniacal Nitrogen	All	NDPs: 0 Tests: 21			X			X			X			X				X			X
Ammonium Soil by Titration	All	NDPs: 0 Tests: 21	X			X			X			X			X				X		
Anions by Kone (soil)	All	NDPs: 0 Tests: 11				X						X							X		
Asbestos ID in Solid Samples	All	NDPs: 0 Tests: 10			X						X							X			
Asbestos Quantification - Full	All	NDPs: 0 Tests: 2																			
CEN Readings	All	NDPs: 0 Tests: 22			X			X			X			X			X	X			X
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 42	X		X	X		X	X		X	X		X	X			X	X		X
Dissolved Metals by ICP-MS	All	NDPs: 0 Tests: 21			X			X			X			X				X			X
EPH CWG (Aliphatic) Filtered GC (W)	All	NDPs: 0 Tests: 21			X			X			X			X				X			X
EPH CWG (Aliphatic) GC (S)	All	NDPs: 0 Tests: 21	X			X			X			X			X				X		
EPH CWG (Aromatic) Filtered GC (W)	All	NDPs: 0 Tests: 21			X			X			X			X				X			X
EPH CWG (Aromatic) GC (S)	All	NDPs: 0 Tests: 21	X			X			X			X			X				X		
GRO by GC-FID (S)	All	NDPs: 0 Tests: 21		X			X			X			X			X				X		
GRO by GC-FID (W)	All	NDPs: 0 Tests: 21			X			X			X			X				X			X

16996031				16996036	
W134-29				W134-30	
0.00 - 0.00				0.00 - 0.00	
250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	
S	S	S	S	S	
			X		
		X			
X			X		
			X		
		X			
		X			
		X			
		X			
X		X	X		
		X			
		X			
		X			
X			X		
		X			
X			X		
	X			X	
		X			

Validated

CERTIFICATE OF ANALYSIS

SDG:	180206-15	**Client Reference:**		**Report Number:**	445153
Location:	Llanwern	**Order Number:**	LLA396	**Superseded Report:**	

Results Legend

X Test

N No Determination Possible

Sample Types -

S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

Lab Sample No(s)			16995993		16996000			16996005			16996009			16996015				16996019			16996031
Customer Sample Reference			W134-23		W134-24			W134-25			W134-26			W134-27				W134-28			W134-29
AGS Reference																					
Depth (m)			0.00 - 0.00		0.00 - 0.00			0.00 - 0.00			0.00 - 0.00			0.00 - 0.00				0.00 - 0.00			0.00 - 0.00
Container			250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	60ml red top tub	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB
Sample Type			S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
Mercury Dissolved	All	NDPs: 0 Tests: 21			X			X			X			X				X			X
Metals by iCap-OES Dissolved (W)	All	NDPs: 0 Tests: 21			X			X			X			X				X			X
Metals in solid samples by OES	All	NDPs: 0 Tests: 21	X			X			X			X			X					X	
PAH by GCMS	All	NDPs: 0 Tests: 21	X			X			X			X			X					X	
PAH in waters by GC-MS (diss.filt)	All	NDPs: 0 Tests: 21			X			X			X						X	X			X
pH	All	NDPs: 0 Tests: 21	X			X			X			X			X					X	
pH Value of Filtered Water	All	NDPs: 0 Tests: 21			X			X			X			X				X			X
Phenols by HPLC (S)	All	NDPs: 0 Tests: 21	X			X			X			X			X					X	
Sample description	All	NDPs: 0 Tests: 21	X			X			X			X			X					X	
Total Organic Carbon	All	NDPs: 0 Tests: 21	X			X			X			X			X					X	
Total Sulphate	All	NDPs: 0 Tests: 11				X						X								X	
Total Sulphur	All	NDPs: 0 Tests: 11				X						X								X	
TPH CWG Filtered (W)	All	NDPs: 0 Tests: 21			X			X			X			X				X			X
TPH CWG GC (S)	All	NDPs: 0 Tests: 21	X			X			X			X			X					X	
VOC MS (W)	All	NDPs: 0 Tests: 21			X			X			X			X				X			X

16996031			16996036		
W134-29			W134-30		
0.00 - 0.00			0.00 - 0.00		
250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	
S	S	S	S	S	
		X			
		X			
X			X		
X			X		
		X			
X			X		
		X			
X			X		
X			X		
X			X		
			X		
			X		
		X			
X			X		
		X			

CERTIFICATE OF ANALYSIS

SDG:	180206-15	**Client Reference:**		**Report Number:**	445153
Location:	Llanwern	**Order Number:**	LLA396	**Superseded Report:**	

Sample Descriptions

Grain Sizes

very fine	<0.063mm	fine	0.063mm - 0.1mm	medium	0.1mm - 2mm	coarse	2mm - 10mm	very coarse	>10mm

Lab Sample No(s)	Customer Sample Ref.	Depth (m)	Colour	Description	Inclusions	Inclusions 2
16995970	W134-10	0.00 - 0.00	Dark Brown	Loamy Sand	Stones	Crushed Brick
16996026	W134-11	0.00 - 0.00	Black	Sand	Stones	Vegetation
16996040	W134-12	0.00 - 0.00	Dark Brown	Sand	Stones	None
16996045	W134-13	0.00 - 0.00	Dark Brown	Sand	Stones	Vegetation
16996058	W134-14	0.00 - 0.00	Dark Brown	Sand	Stones	Vegetation
16996072	W134-15	0.00 - 0.00	Black	Sand	Stones	Vegetation
16996077	W134-16	0.00 - 0.00	Dark Brown	Dry Sample Received	Stones	None
16996083	W134-17	0.00 - 0.00	Dark Brown	Loamy Sand	Stones	Crushed Brick
16996087	W134-18	0.00 - 0.00	Dark Brown	Dry Sample Received	Stones	None
16995977	W134-19	0.00 - 0.00	Dark Brown	Dry Sample Received	Coal fragments	Stones
16995981	W134-20	0.00 - 0.00	Dark Brown	Loamy Sand	Stones	Vegetation
16995985	W134-21	0.00 - 0.00	Black	Sandy Loam	Stones	None
16995989	W134-22	0.00 - 0.00	Dark Brown	Dry Sample Received	Stones	None
16995993	W134-23	0.00 - 0.00	Dark Brown	Dry Sample Received	Stones	None
16996000	W134-24	0.00 - 0.00	Black	Dry Sample Received	Stones	None
16996005	W134-25	0.00 - 0.00	Black	Loamy Sand	Stones	Crushed Brick
16996009	W134-26	0.00 - 0.00	Dark Brown	Loamy Sand	Stones	Crushed Brick
16996015	W134-27	0.00 - 0.00	Black	Loamy Sand	Stones	Crushed Brick
16996019	W134-28	0.00 - 0.00	Dark Brown	Loamy Sand	Stones	Crushed Brick
16996031	W134-29	0.00 - 0.00	Black	Dry Sample Received	Stones	None
16996036	W134-30	0.00 - 0.00	Dark Brown	Sand	Stones	Vegetation

These descriptions are only intended to act as a cross check if sample identities are questioned, and to provide a log of sample matrices with respect to MCERTS validation. They are not intended as full geological descriptions.

We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally ocurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample.

Other coarse granular materials such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

Validated

CERTIFICATE OF ANALYSIS

SDG:	180206-15	**Client Reference:**		**Report Number:**	445153
Location:	Llanwern	**Order Number:**	LLA396	**Superseded Report:**	

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	W134-10	W134-11	W134-12	W134-13	W134-14	W134-15
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	05/02/2018	05/02/2018	05/02/2018	05/02/2018	05/02/2018	05/02/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	06/02/2018	06/02/2018	06/02/2018	06/02/2018	06/02/2018	06/02/2018
			SDG Ref	180206-15	180206-15	180206-15	180206-15	180206-15	180206-15
			Lab Sample No.(s)	16995970	16996026	16996040	16996045	16996058	16996072
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		7.3	7.8	9.2	12	11	10
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	<12 M	<12 M	<12 M	<12 M	<12 M
Phenol	<0.01 mg/kg	TM062 (S)		0.0216 M	<0.01 M	0.033 M	0.0342 M	0.0339 M	0.0111 M
Cresols	<0.01 mg/kg	TM062 (S)		0.0108 M	<0.01 M	0.011 M	<0.01 M	<0.01 M	<0.01 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 M	0.044 M	<0.035 M	<0.035 M	<0.035 M
Sulphur, Total	<0.02 %	TM132		0.253		0.283		0.298	
Sulphate, Total potential	<0.06 %	TM132		0.759		0.849		0.894	
Soil Organic Matter (SOM)	<0.35 %	TM132		20 #	11 #	16.7 #	29.3 #	18.1 #	27.4 #
pH	1 pH Units	TM133		10.4 M	10.5 M	9.95 M	10.2 M	10.4 M	9.56 M
Cyanide, Total	<1 mg/kg	TM153		1.19 M	<1 M	<1 M	<1 M	<1 M	2.72 M
Arsenic	<0.6 mg/kg	TM181		<6 M	<6 M	<6 M	6.74 M	8.38 M	7.6 M
Cadmium	<0.02 mg/kg	TM181		<0.2 M	<0.2 M	<0.2 M	0.0553 M	<0.2 M	0.831 M
Chromium	<0.9 mg/kg	TM181		691 M	563 M	622 M	214 M	308 M	349 M
Copper	<1.4 mg/kg	TM181		14.8 M	<14 M	<14 M	20.2 M	22.2 M	25.5 M
Iron	<1000 mg/kg	TM181		160000 #	147000 #	137000 #	66000 #	104000 #	97700 #
Lead	<0.7 mg/kg	TM181		72.2 M	35.9 M	54.3 M	36.6 M	128 M	192 M
Manganese	<0.13 mg/kg	TM181		27600 M	27800 M	27100 M	15600 M	17500 M	14800 M
Mercury	<0.14 mg/kg	TM181		<1.4 M	<1.4 M	<1.4 M	<0.14 M	<1.4 M	<1.4 M
Nickel	<0.2 mg/kg	TM181		13.9 M	5.33 M	9.88 M	12.7 M	18.7 M	19.2 M
Selenium	<1 mg/kg	TM181		10.5 #	<10 #	10.3 #	4.88 #	<10 #	<10 #
Vanadium	<0.2 mg/kg	TM181		500 #	373 #	471 #	369 #	389 #	314 #
Zinc	<1.9 mg/kg	TM181		215 M	88.3 M	148 M	137 M	336 M	696 M
Sulphate, acid soluble (total)	<0.02 %	TM221		0.288		0.318		0.363	
Calcium	<21 mg/kg	TM224		177000		207000		151000	
Magnesium	<8 mg/kg	TM224		14000		15600		13200	
Soluble Sulphate 2:1 extract as SO4 BRE	<0.004 g/l	TM243		0.117 M		0.157 M		0.168 M	

Validated

CERTIFICATE OF ANALYSIS

SDG:	180206-15	**Client Reference:**		**Report Number:**	445153
Location:	Llanwern	**Order Number:**	LLA396	**Superseded Report:**	

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	W134-16	W134-17	W134-18	W134-19	W134-20	W134-21
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	05/02/2018	05/02/2018	05/02/2018	05/02/2018	05/02/2018	05/02/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	06/02/2018	06/02/2018	06/02/2018	06/02/2018	06/02/2018	06/02/2018
			SDG Ref	180206-15	180206-15	180206-15	180206-15	180206-15	180206-15
			Lab Sample No.(s)	16996077	16996083	16996087	16995977	16995981	16995985
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		9.5	10	6.6	6.5	4.8	10
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 #	<12 M	<12 #	<12 #	<12 M	<12 M
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 #	0.0111 M	0.0214 #	0.0321 #	0.042 M	<0.01 M
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 #	<0.01 M	0.0107 #	<0.01 #	0.0105 M	<0.01 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 #	<0.015 M	<0.015 #	<0.015 #	<0.015 M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 #	<0.035 M	<0.035 #	<0.035 #	0.0525 M	<0.035 M
Sulphur, Total	<0.02 %	TM132		0.22		0.29		0.307	
Sulphate, Total potential	<0.06 %	TM132		0.66		0.87		0.921	
Soil Organic Matter (SOM)	<0.35 %	TM132		6.26 #	31.9 #	20.5 #	52.1 #	52.8 #	13.7 #
pH	1 pH Units	TM133		10.1 #	10.5 M	9.37 #	9.8 #	9.71 M	10.2 M
Cyanide, Total	<1 mg/kg	TM153		<1 #	3.02 M	2.02 #	3.31 #	<1 M	<1 M
Arsenic	<0.6 mg/kg	TM181		<6 #	6.59 M	6.99 #	7.4 #	7.24 M	8.88 M
Cadmium	<0.02 mg/kg	TM181		<0.2 #	0.434 M	<0.2 #	0.903 #	0.289 M	1.02 M
Chromium	<0.9 mg/kg	TM181		407 #	345 M	207 #	122 #	109 M	285 M
Copper	<1.4 mg/kg	TM181		<14 #	17.7 M	16.2 #	16 #	19.6 M	27.6 M
Iron	<1000 mg/kg	TM181		87800 #	114000 #	125000 #	57800 #	57800 #	131000 #
Lead	<0.7 mg/kg	TM181		42.9 #	54.7 M	86.8 #	104 #	65.9 M	129 M
Manganese	<0.13 mg/kg	TM181		22100 #	15800 M	12200 #	8220 #	8310 M	22600 M
Mercury	<0.14 mg/kg	TM181		<1.4 #	<0.14 M	<1.4 #	<0.14 #	<0.14 M	<1.4 M
Nickel	<0.2 mg/kg	TM181		23.7 #	9.9 M	25.3 #	13.7 #	14.3 M	21 M
Selenium	<1 mg/kg	TM181		<10 #	5.9 #	<10 #	3.56 #	2.54 #	<10 #
Vanadium	<0.2 mg/kg	TM181		636 #	290 #	306 #	125 #	152 #	290 #
Zinc	<1.9 mg/kg	TM181		151 #	360 M	279 #	444 #	260 M	444 M
Sulphate, acid soluble (total)	<0.02 %	TM221		0.208		0.354		0.372	
Calcium	<21 mg/kg	TM224		159000		96200		84500	
Magnesium	<8 mg/kg	TM224		13600		9520		7450	
Soluble Sulphate 2:1 extract as SO4 BRE	<0.004 g/l	TM243		0.157 #		0.171 #		0.257 M	
Asbestos Quantification - Gravimetric - %	<0.001 %	TM304		0.0013 #					
Asbestos Quantification - PCOM Evaluation - %	<0.001 %	TM304		<0.001 #					
Additional Asbestos Components (Using TM048)		TM304		None #					
Analysts Comments		TM304		N/A					
Asbestos Quantification - Total - %	<0.001 %	TM304		0.0013 #					

Validated

CERTIFICATE OF ANALYSIS

SDG:	180206-15	**Client Reference:**		**Report Number:**	445153
Location:	Llanwern	**Order Number:**	LLA396	**Superseded Report:**	

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	W134-22	W134-23	W134-24	W134-25	W134-26	W134-27
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	05/02/2018	05/02/2018	05/02/2018	05/02/2018	05/02/2018	05/02/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	06/02/2018	06/02/2018	06/02/2018	06/02/2018	06/02/2018	06/02/2018
			SDG Ref	180206-15	180206-15	180206-15	180206-15	180206-15	180206-15
			Lab Sample No.(s)	16995989	16995993	16996000	16996005	16996009	16996015
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		8.7	8.5	8.3	8.8	12	8.3
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 #	<12 #	<12 #	<12 M	<12 M	<12 M
Phenol	<0.01 mg/kg	TM062 (S)		0.0219 #	0.0109 #	0.0218 #	0.0329 M	0.0342 M	0.0218 M
Cresols	<0.01 mg/kg	TM062 (S)		0.011 #	<0.01 #	0.0109 #	0.0219 M	0.0114 M	<0.01 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 #	<0.015 #	<0.015 #	<0.015 M	<0.015 M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 #	<0.035 #	<0.035 #	0.0549 M	0.0456 M	<0.035 M
Sulphur, Total	<0.02 %	TM132		0.379		0.282		0.307	
Sulphate, Total potential	<0.06 %	TM132		1.14		0.846		0.921	
Soil Organic Matter (SOM)	<0.35 %	TM132		13.3 #	16.7 #	20.9 #	9.76 #	54.3 #	14.8 #
pH	1 pH Units	TM133		9.94 #	10.2 #	10.2 #	10.4 M	10.5 M	10.6 M
Cyanide, Total	<1 mg/kg	TM153		1.34 #	1.18 #	<1 #	1.8 M	1.01 M	<1 M
Arsenic	<0.6 mg/kg	TM181		9.48 #	6.19 #	5.38 #	3.72 M	9.62 M	4.29 M
Cadmium	<0.02 mg/kg	TM181		<0.2 #	<0.2 #	<0.02 #	0.297 M	0.705 M	0.201 M
Chromium	<0.9 mg/kg	TM181		346 #	340 #	404 #	339 M	233 M	680 M
Copper	<1.4 mg/kg	TM181		29.2 #	20.1 #	15.9 #	18.3 M	38.5 M	16.4 M
Iron	<1000 mg/kg	TM181		191000 #	118000 #	115000 #	83700 #	136000 #	118000 #
Lead	<0.7 mg/kg	TM181		99.9 #	65.2 #	55.1 #	47.9 M	76.2 M	23.7 M
Manganese	<0.13 mg/kg	TM181		21700 #	24000 #	19900 #	15700 M	13500 M	23300 M
Mercury	<0.14 mg/kg	TM181		<1.4 #	<1.4 #	<0.14 #	<0.14 M	<1.4 M	<0.14 M
Nickel	<0.2 mg/kg	TM181		20.1 #	14.1 #	7.27 #	10.3 M	28.5 M	5 M
Selenium	<1 mg/kg	TM181		<10 #	10.7 #	5.44 #	5.98 #	<10 #	7.88 #
Vanadium	<0.2 mg/kg	TM181		367 #	442 #	317 #	306 #	308 #	402 #
Zinc	<1.9 mg/kg	TM181		334 #	194 #	218 #	203 M	202 M	133 M
Sulphate, acid soluble (total)	<0.02 %	TM221		0.341		0.441		0.351	
Calcium	<21 mg/kg	TM224		177000		160000		112000	
Magnesium	<8 mg/kg	TM224		8900		12700		11300	
Soluble Sulphate 2:1 extract as SO4 BRE	<0.004 g/l	TM243		0.155 #		0.169 #		0.245 M	

Validated

CERTIFICATE OF ANALYSIS

SDG:	180206-15	**Client Reference:**		**Report Number:**	445153
Location:	Llanwern	**Order Number:**	LLA396	**Superseded Report:**	

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	W134-28	W134-29	W134-30			
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00			
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)			
			Date Sampled	05/02/2018	05/02/2018	05/02/2018			
			Sample Time	00:00	00:00	00:00			
			Date Received	06/02/2018	06/02/2018	06/02/2018			
			SDG Ref	180206-15	180206-15	180206-15			
			Lab Sample No.(s)	16996019	16996031	16996036			
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		9.7	0	8.8			
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	<12 #	<12 M			
Phenol	<0.01 mg/kg	TM062 (S)		0.0222 M	0.0207 #	0.0329 M			
Cresols	<0.01 mg/kg	TM062 (S)		0.0222 M	0.0103 #	0.0329 M			
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	0.0207 #	0.0219 M			
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		0.0444 M	0.0516 #	0.0877 M			
Sulphur, Total	<0.02 %	TM132		0.272		0.418			
Sulphate, Total potential	<0.06 %	TM132		0.816		1.25			
Soil Organic Matter (SOM)	<0.35 %	TM132		21.9 #	15.1 #	21.9 #			
pH	1 pH Units	TM133		10.3 M	10.1 #	9.74 M			
Cyanide, Total	<1 mg/kg	TM153		<1 M	<1 #	<1 M			
Arsenic	<0.6 mg/kg	TM181		<6 M	6.02 #	6.52 M			
Cadmium	<0.02 mg/kg	TM181		<0.2 M	<0.2 #	<0.2 M			
Chromium	<0.9 mg/kg	TM181		321 M	425 #	423 M			
Copper	<1.4 mg/kg	TM181		16.3 M	<14 #	22.6 M			
Iron	<1000 mg/kg	TM181		108000 #	112000 #	118000 #			
Lead	<0.7 mg/kg	TM181		85.5 M	67.6 #	83.3 M			
Manganese	<0.13 mg/kg	TM181		19500 M	51500 #	24000 M			
Mercury	<0.14 mg/kg	TM181		<1.4 M	<1.4 #	<1.4 M			
Nickel	<0.2 mg/kg	TM181		15.8 M	10 #	17 M			
Selenium	<1 mg/kg	TM181		<10 #	23.2 #	10.2 #			
Vanadium	<0.2 mg/kg	TM181		409 #	400 #	398 #			
Zinc	<1.9 mg/kg	TM181		242 M	217 #	227 M			
Sulphate, acid soluble (total)	<0.02 %	TM221		0.24		0.449			
Calcium	<21 mg/kg	TM224		131000		175000			
Magnesium	<8 mg/kg	TM224		9860		12100			
Soluble Sulphate 2:1 extract as SO4 BRE	<0.004 g/l	TM243		0.185 M		0.239 M			
Asbestos Quantification - Gravimetric - %	<0.001 %	TM304				<0.001 #			
Asbestos Quantification - PCOM Evaluation - %	<0.001 %	TM304				<0.001 #			
Additional Asbestos Components (Using TM048)		TM304				None #			
Analysts Comments		TM304				0			
Asbestos Quantification - Total - %	<0.001 %	TM304				<0.001 #			

Validated

CERTIFICATE OF ANALYSIS

SDG:	180206-15	**Client Reference:**		**Report Number:**	445153
Location:	Llanwern	**Order Number:**	LLA396	**Superseded Report:**	

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	W134-10	W134-11	W134-12	W134-13	W134-14	W134-15
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	05/02/2018	05/02/2018	05/02/2018	05/02/2018	05/02/2018	05/02/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	06/02/2018	06/02/2018	06/02/2018	06/02/2018	06/02/2018	06/02/2018
			SDG Ref	180206-15	180206-15	180206-15	180206-15	180206-15	180206-15
			Lab Sample No.(s)	16995970	16996026	16996040	16996045	16996058	16996072
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		103	104	104	104	102	103
Acenaphthene-d10 % recovery**	%	TM218		99.2	100	101	99.4	98.5	99.2
Phenanthrene-d10 % recovery**	%	TM218		102	102	103	101	100	102
Chrysene-d12 % recovery**	%	TM218		94.6	93.6	96.8	96.5	94.7	92.3
Perylene-d12 % recovery**	%	TM218		95.7	95.8	96.7	97.5	94.6	96.3
Naphthalene	<0.009 mg/kg	TM218		14.1 M	7.59 M	13.6 M	6.33 M	13.7 M	13.8 M
Acenaphthylene	<0.012 mg/kg	TM218		2.62 M	1.94 M	1.55 M	1.04 M	1.96 M	4.86 M
Acenaphthene	<0.008 mg/kg	TM218		0.658 M	0.314 M	0.451 M	0.217 M	0.449 M	0.658 M
Fluorene	<0.01 mg/kg	TM218		2.72 M	1.94 M	1.96 M	1.07 M	3.86 M	3.51 M
Phenanthrene	<0.015 mg/kg	TM218		14.2 M	16.4 M	10.2 M	6.01 M	14.9 M	25.3 M
Anthracene	<0.016 mg/kg	TM218		4.96 M	6.51 M	2.82 M	2.07 M	3.47 M	9.61 M
Fluoranthene	<0.017 mg/kg	TM218		25.5 M	35.7 M	14.4 M	10.2 M	17.2 M	55.8 M
Pyrene	<0.015 mg/kg	TM218		17.7 M	25.4 M	10.2 M	7.18 M	11.4 M	38.5 M
Benz(a)anthracene	<0.014 mg/kg	TM218		12.6 M	18.9 M	6.83 M	4.54 M	7.47 M	25 M
Chrysene	<0.01 mg/kg	TM218		11.4 M	16 M	6.23 M	4.21 M	6.51 M	22.4 M
Benzo(b)fluoranthene	<0.015 mg/kg	TM218		19.1 M	25.6 M	10.1 M	6.93 M	10.1 M	35.6 M
Benzo(k)fluoranthene	<0.014 mg/kg	TM218		5.77 M	8.36 M	3.39 M	2.26 M	3.13 M	11.3 M
Benzo(a)pyrene	<0.015 mg/kg	TM218		12.1 M	16.6 M	6.71 M	4.39 M	6.34 M	23.2 M
Indeno(1,2,3-cd)pyrene	<0.018 mg/kg	TM218		7.05 M	8.36 M	3.56 M	2.61 M	3.33 M	13.3 M
Dibenzo(a,h)anthracene	<0.023 mg/kg	TM218		2.25 M	2.74 M	1.17 M	0.802 M	1.13 M	4.09 M
Benzo(g,h,i)perylene	<0.024 mg/kg	TM218		8.42 M	9.27 M	4.24 M	3 M	3.81 M	15.5 M
PAH, Total Detected USEPA 16	<0.118 mg/kg	TM218		161	202	97.4	62.9	109	302

Validated

CERTIFICATE OF ANALYSIS

SDG:	180206-15	**Client Reference:**		**Report Number:**	445153
Location:	Llanwern	**Order Number:**	LLA396	**Superseded Report:**	

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	W134-16	W134-17	W134-18	W134-19	W134-20	W134-21
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	05/02/2018	05/02/2018	05/02/2018	05/02/2018	05/02/2018	05/02/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	06/02/2018	06/02/2018	06/02/2018	06/02/2018	06/02/2018	06/02/2018
			SDG Ref	180206-15	180206-15	180206-15	180206-15	180206-15	180206-15
			Lab Sample No.(s)	16996077	16996083	16996087	16995977	16995981	16995985
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		93.1	101	85.7	95.4	109	105
Acenaphthene-d10 % recovery**	%	TM218		88	94.6	82.2	90.2	103	99.1
Phenanthrene-d10 % recovery**	%	TM218		89.1	97.8	81.6	90	105	100
Chrysene-d12 % recovery**	%	TM218		84.5	91.4	81.8	85.7	106	93.7
Perylene-d12 % recovery**	%	TM218		89.6	84	86.8	89.7	112	94.1
Naphthalene	<0.009 mg/kg	TM218		12 #	16.1 M	12.1 #	4.58 #	12.4 M	2.23 M
Acenaphthylene	<0.012 mg/kg	TM218		1.21 #	6.45 M	3.23 #	1.04 #	1.58 M	0.304 M
Acenaphthene	<0.008 mg/kg	TM218		0.418 #	1.3 M	0.652 #	0.283 #	0.438 M	0.0895 M
Fluorene	<0.01 mg/kg	TM218		1.05 #	4.73 M	2.6 #	0.954 #	2.81 M	0.456 M
Phenanthrene	<0.015 mg/kg	TM218		4.56 #	26 M	14.1 #	5.29 #	14 M	2.12 M
Anthracene	<0.016 mg/kg	TM218		1.32 #	10.4 M	5.48 #	1.7 #	3.38 M	0.472 M
Fluoranthene	<0.017 mg/kg	TM218		8.25 #	69.2 M	34 #	9.71 #	19.3 M	3.4 M
Pyrene	<0.015 mg/kg	TM218		5.95 #	46.5 M	23.7 #	6.62 #	13.5 M	2.43 M
Benz(a)anthracene	<0.014 mg/kg	TM218		3.88 #	33.4 M	16.3 #	4.35 #	8.93 M	1.41 M
Chrysene	<0.01 mg/kg	TM218		3.27 #	31.5 M	13.6 #	3.72 #	6.93 M	1.42 M
Benzo(b)fluoranthene	<0.015 mg/kg	TM218		5.15 #	55.6 M	21.8 #	5.89 #	11.5 M	2.22 M
Benzo(k)fluoranthene	<0.014 mg/kg	TM218		2.11 #	16.3 M	8.41 #	2.17 #	4.53 M	0.763 M
Benzo(a)pyrene	<0.015 mg/kg	TM218		3.93 #	35.8 M	16 #	4.27 #	8.14 M	1.41 M
Indeno(1,2,3-cd)pyrene	<0.018 mg/kg	TM218		2.39 #	21.4 M	9.55 #	2.72 #	4.53 M	0.821 M
Dibenzo(a,h)anthracene	<0.023 mg/kg	TM218		0.741 #	6.49 M	2.98 #	0.794 #	1.43 M	0.251 M
Benzo(g,h,i)perylene	<0.024 mg/kg	TM218		2.98 #	25.5 M	11.4 #	3.29 #	5.55 M	1 M
PAH, Total Detected USEPA 16	<0.118 mg/kg	TM218		59.2	407	196	57.4	119	20.8

CERTIFICATE OF ANALYSIS

SDG:	180206-15	**Client Reference:**		**Report Number:**	445153
Location:	Llanwern	**Order Number:**	LLA396	**Superseded Report:**	

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	W134-22	W134-23	W134-24	W134-25	W134-26	W134-27
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	05/02/2018	05/02/2018	05/02/2018	05/02/2018	05/02/2018	05/02/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	06/02/2018	06/02/2018	06/02/2018	06/02/2018	06/02/2018	06/02/2018
			SDG Ref	180206-15	180206-15	180206-15	180206-15	180206-15	180206-15
			Lab Sample No.(s)	16995989	16995993	16996000	16996005	16996009	16996015
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		102	97.8	103	103	102	113
Acenaphthene-d10 % recovery**	%	TM218		96.5	93.2	98	99.7	98.8	110
Phenanthrene-d10 % recovery**	%	TM218		97.9	95.3	100	102	101	114
Chrysene-d12 % recovery**	%	TM218		91.6	94.5	93.8	95	95.5	106
Perylene-d12 % recovery**	%	TM218		91	100	93.4	94.8	95	106
Naphthalene	<0.009 mg/kg	TM218		7.22 #	16.4 #	9.52 #	23 M	19 M	21.6 M
Acenaphthylene	<0.012 mg/kg	TM218		0.846 #	4.95 #	1.14 #	1.98 M	1.87 M	4.03 M
Acenaphthene	<0.008 mg/kg	TM218		0.288 #	1.01 #	0.569 #	0.549 M	0.54 M	0.758 M
Fluorene	<0.01 mg/kg	TM218		1.24 #	14 #	2.31 #	3.3 M	2.75 M	6.38 M
Phenanthrene	<0.015 mg/kg	TM218		6.15 #	53.9 #	10.2 #	14.3 M	12.5 M	28 M
Anthracene	<0.016 mg/kg	TM218		1.66 #	11 #	2.18 #	3.69 M	3.16 M	9.74 M
Fluoranthene	<0.017 mg/kg	TM218		8.68 #	53.5 #	11.8 #	18.5 M	15.1 M	29.7 M
Pyrene	<0.015 mg/kg	TM218		6.29 #	31.7 #	7.65 #	12.6 M	10.2 M	19.5 M
Benz(a)anthracene	<0.014 mg/kg	TM218		4.03 #	19.1 #	4.69 #	8.21 M	6.44 M	11.7 M
Chrysene	<0.01 mg/kg	TM218		3.9 #	14.5 #	4.08 #	7.3 M	5.75 M	10.7 M
Benzo(b)fluoranthene	<0.015 mg/kg	TM218		6.25 #	19.1 #	6.13 #	11.6 M	8.8 M	15.1 M
Benzo(k)fluoranthene	<0.014 mg/kg	TM218		2.16 #	7.83 #	2.02 #	3.74 M	3.02 M	5.06 M
Benzo(a)pyrene	<0.015 mg/kg	TM218		4.09 #	14.3 #	3.84 #	7.46 M	5.67 M	9.73 M
Indeno(1,2,3-cd)pyrene	<0.018 mg/kg	TM218		2.24 #	7.48 #	1.97 #	3.94 M	3.06 M	5.17 M
Dibenzo(a,h)anthracene	<0.023 mg/kg	TM218		0.72 #	2.5 #	0.676 #	1.32 M	1.03 M	1.67 M
Benzo(g,h,i)perylene	<0.024 mg/kg	TM218		2.71 #	8.38 #	2.27 #	4.64 M	3.62 M	5.93 M
PAH, Total Detected USEPA 16	<0.118 mg/kg	TM218		58.5	280	71.1	126	102	185

Validated

CERTIFICATE OF ANALYSIS

SDG:	180206-15	**Client Reference:**		**Report Number:**	445153
Location:	Llanwern	**Order Number:**	LLA396	**Superseded Report:**	

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	W134-28	W134-29	W134-30			
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00			
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)			
			Date Sampled	05/02/2018	05/02/2018	05/02/2018			
			Sample Time	00:00	00:00	00:00			
			Date Received	06/02/2018	06/02/2018	06/02/2018			
			SDG Ref	180206-15	180206-15	180206-15			
			Lab Sample No.(s)	16996019	16996031	16996036			
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		102	103	104			
Acenaphthene-d10 % recovery**	%	TM218		98.9	99.1	101			
Phenanthrene-d10 % recovery**	%	TM218		101	101	103			
Chrysene-d12 % recovery**	%	TM218		94.3	95	95			
Perylene-d12 % recovery**	%	TM218		95.1	95.7	96.1			
Naphthalene	<0.009 mg/kg	TM218		19.1 M	16 #	24.6 M			
Acenaphthylene	<0.012 mg/kg	TM218		3.28 M	1.94 #	3.59 M			
Acenaphthene	<0.008 mg/kg	TM218		0.557 M	0.504 #	0.738 M			
Fluorene	<0.01 mg/kg	TM218		5.12 M	3.54 #	6.95 M			
Phenanthrene	<0.015 mg/kg	TM218		22.8 M	16.1 #	30.1 M			
Anthracene	<0.016 mg/kg	TM218		6.43 M	4.06 #	7.46 M			
Fluoranthene	<0.017 mg/kg	TM218		31.9 M	18.7 #	32.7 M			
Pyrene	<0.015 mg/kg	TM218		21.2 M	12.4 #	21.9 M			
Benz(a)anthracene	<0.014 mg/kg	TM218		12.3 M	7.72 #	14 M			
Chrysene	<0.01 mg/kg	TM218		10.1 M	6.48 #	12.6 M			
Benzo(b)fluoranthene	<0.015 mg/kg	TM218		15.6 M	9.8 #	18 M			
Benzo(k)fluoranthene	<0.014 mg/kg	TM218		5.16 M	3.4 #	5.98 M			
Benzo(a)pyrene	<0.015 mg/kg	TM218		9.83 M	6.31 #	11.8 M			
Indeno(1,2,3-cd)pyrene	<0.018 mg/kg	TM218		5.25 M	3.34 #	6.23 M			
Dibenzo(a,h)anthracene	<0.023 mg/kg	TM218		1.68 M	1.12 #	2.01 M			
Benzo(g,h,i)perylene	<0.024 mg/kg	TM218		5.96 M	3.88 #	7.1 M			
PAH, Total Detected USEPA 16	<0.118 mg/kg	TM218		176	115	206			

Validated

CERTIFICATE OF ANALYSIS

SDG:	180206-15	**Client Reference:**		**Report Number:**	445153
Location:	Llanwern	**Order Number:**	LLA396	**Superseded Report:**	

TPH CWG (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	W134-10	W134-11	W134-12	W134-13	W134-14	W134-15
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	05/02/2018	05/02/2018	05/02/2018	05/02/2018	05/02/2018	05/02/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	06/02/2018	06/02/2018	06/02/2018	06/02/2018	06/02/2018	06/02/2018
			SDG Ref	180206-15	180206-15	180206-15	180206-15	180206-15	180206-15
			Lab Sample No.(s)	16995970	16996026	16996040	16996045	16996058	16996072
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		4	22	28	19	50	42
GRO TOT (Moisture Corrected)	<0.044 mg/kg	TM089		0.743 M	<0.176 M	0.234 M	<0.176 M	0.244 M	0.502 M
Methyl tertiary butyl ether (MTBE)	<0.005 mg/kg	TM089		<0.02 #	<0.02 #	<0.02 #	<0.02 #	<0.02 #	<0.02 #
Benzene	<0.01 mg/kg	TM089		<0.04 M	<0.04 M	<0.04 M	<0.04 M	<0.04 M	<0.04 M
Toluene	<0.002 mg/kg	TM089		0.0367 M	0.0228 M	0.0264 M	0.0205 M	0.0294 M	0.0144 M
Ethylbenzene	<0.003 mg/kg	TM089		<0.012 M	<0.012 M	<0.012 M	<0.012 M	<0.012 M	<0.012 M
m,p-Xylene	<0.006 mg/kg	TM089		0.0281 M	<0.024 M	<0.024 M	<0.024 M	<0.024 M	<0.024 M
o-Xylene	<0.003 mg/kg	TM089		0.0151 M	<0.012 M	<0.012 M	<0.012 M	<0.012 M	<0.012 M
sum of detected mpo xylene by GC	<0.009 mg/kg	TM089		0.0432	<0.009	<0.009	<0.009	<0.009	<0.009
sum of detected BTEX by GC	<0.024 mg/kg	TM089		0.0799	<0.024	0.0264	<0.024	0.0294	<0.024
Aliphatics >C5-C6	<0.01 mg/kg	TM089		0.0421	<0.04	<0.04	<0.04	<0.04	<0.04
Aliphatics >C6-C8	<0.01 mg/kg	TM089		0.207	<0.04	<0.04	<0.04	<0.04	0.0544
Aliphatics >C8-C10	<0.01 mg/kg	TM089		0.0971	<0.04	<0.04	<0.04	<0.04	0.0544
Aliphatics >C10-C12	<0.01 mg/kg	TM089		0.132	<0.04	<0.04	<0.04	0.0452	0.174
Aliphatics >C12-C16	<0.1 mg/kg	TM173		8.17	7.19	6.87	5.31	6.27	4.82
Aliphatics >C16-C21	<0.1 mg/kg	TM173		55.8	51.4	44.7	28.3	44.6	33.8
Aliphatics >C21-C35	<0.1 mg/kg	TM173		92.4	69.2	83.6	57.4	77.4	66.8
Aliphatics >C35-C44	<0.1 mg/kg	TM173		21.4	16	21.9	13.7	20.8	17.4
Total Aliphatics >C12-C44	<0.1 mg/kg	TM173		178	144	157	105	149	123
Aromatics >EC5-EC7	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Aromatics >EC7-EC8	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Aromatics >EC8-EC10	<0.01 mg/kg	TM089		0.107	0.0412	0.0484	<0.04	0.0531	0.0577
Aromatics >EC10-EC12	<0.01 mg/kg	TM089		0.0874	<0.04	<0.04	<0.04	<0.04	0.117
Aromatics >EC12-EC16	<0.1 mg/kg	TM173		18.7	10.2	13.5	14.1	13.4	15.6
Aromatics >EC16-EC21	<0.1 mg/kg	TM173		131	63.4	81.5	85.3	70.4	118
Aromatics >EC21-EC35	<0.1 mg/kg	TM173		310	157	184	191	153	332
Aromatics >EC35-EC44	<0.1 mg/kg	TM173		79.6	41	50.1	47.3	43	94.1
Aromatics >EC40-EC44	<0.1 mg/kg	TM173		27.8	14.3	17.7	16	15.1	31.3
Total Aromatics >EC12-EC44	<0.1 mg/kg	TM173		539	271	329	338	280	560
Total Aliphatics & Aromatics >C5-C44	<0.1 mg/kg	TM173		717	415	487	443	429	683

Validated

CERTIFICATE OF ANALYSIS

SDG:	180206-15	**Client Reference:**		**Report Number:**	445153
Location:	Llanwern	**Order Number:**	LLA396	**Superseded Report:**	

TPH CWG (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	W134-16	W134-17	W134-18	W134-19	W134-20	W134-21
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	05/02/2018	05/02/2018	05/02/2018	05/02/2018	05/02/2018	05/02/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	06/02/2018	06/02/2018	06/02/2018	06/02/2018	06/02/2018	06/02/2018
			SDG Ref	180206-15	180206-15	180206-15	180206-15	180206-15	180206-15
			Lab Sample No.(s)	16996077	16996083	16996087	16995977	16995981	16995985
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		52	48	28	35	26	40
GRO TOT (Moisture Corrected)	<0.044 mg/kg	TM089		<0.176 #	<0.176 M	<0.176 #	0.246 #	0.373 M	0.383 M
Methyl tertiary butyl ether (MTBE)	<0.005 mg/kg	TM089		<0.02 #	<0.02 #	<0.02 #	<0.02 #	<0.02 #	<0.02 #
Benzene	<0.01 mg/kg	TM089		<0.04 #	<0.04 M	<0.04 #	<0.04 #	<0.04 M	<0.04 M
Toluene	<0.002 mg/kg	TM089		<0.008 #	0.0144 M	0.0171 #	0.0171 #	0.0294 M	0.0244 M
Ethylbenzene	<0.003 mg/kg	TM089		<0.012 #	<0.012 M	<0.012 #	<0.012 #	<0.012 M	<0.012 M
m,p-Xylene	<0.006 mg/kg	TM089		<0.024 #	<0.024 M	<0.024 #	<0.024 #	0.0284 M	0.0311 M
o-Xylene	<0.003 mg/kg	TM089		<0.012 #	<0.012 M	<0.012 #	<0.012 #	<0.012 M	<0.012 M
sum of detected mpo xylene by GC	<0.009 mg/kg	TM089		<0.009	<0.009	<0.009	<0.009	0.0284	0.0311
sum of detected BTEX by GC	<0.024 mg/kg	TM089		<0.024	<0.024	<0.024	<0.024	0.0578	0.0555
Aliphatics >C5-C6	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Aliphatics >C6-C8	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	0.0599	0.0522
Aliphatics >C8-C10	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	0.0452	0.0533
Aliphatics >C10-C12	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	0.0621	0.0777	0.0855
Aliphatics >C12-C16	<0.1 mg/kg	TM173		2.64	8.82	2.06	5.94	6.65	1.75
Aliphatics >C16-C21	<0.1 mg/kg	TM173		20.3	70.2	13.7	37.6	44	20.2
Aliphatics >C21-C35	<0.1 mg/kg	TM173		45.7	73.1	31.5	86.3	76.8	37.6
Aliphatics >C35-C44	<0.1 mg/kg	TM173		12.6	17.6	7.51	38.2	19.2	10.5
Total Aliphatics >C12-C44	<0.1 mg/kg	TM173		81.2	170	54.7	168	147	70
Aromatics >EC5-EC7	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Aromatics >EC7-EC8	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Aromatics >EC8-EC10	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	0.0407	0.0693	0.0766
Aromatics >EC10-EC12	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	0.0417	0.0515	0.0566
Aromatics >EC12-EC16	<0.1 mg/kg	TM173		8.25	14.2	6.73	21.1	20.3	4.37
Aromatics >EC16-EC21	<0.1 mg/kg	TM173		83.5	108	49	178	106	26.6
Aromatics >EC21-EC35	<0.1 mg/kg	TM173		210	385	129	458	216	76.2
Aromatics >EC35-EC44	<0.1 mg/kg	TM173		56.8	115	30.5	141	56.4	21.5
Aromatics >EC40-EC44	<0.1 mg/kg	TM173		19.7	42.1	11.6	53.2	19.7	7.8
Total Aromatics >EC12-EC44	<0.1 mg/kg	TM173		359	622	216	799	399	129
Total Aliphatics & Aromatics >C5-C44	<0.1 mg/kg	TM173		440	792	270	967	546	199

Validated

CERTIFICATE OF ANALYSIS

SDG:	180206-15	**Client Reference:**		**Report Number:**	445153
Location:	Llanwern	**Order Number:**	LLA396	**Superseded Report:**	

TPH CWG (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	W134-22	W134-23	W134-24	W134-25	W134-26	W134-27
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	05/02/2018	05/02/2018	05/02/2018	05/02/2018	05/02/2018	05/02/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	06/02/2018	06/02/2018	06/02/2018	06/02/2018	06/02/2018	06/02/2018
			SDG Ref	180206-15	180206-15	180206-15	180206-15	180206-15	180206-15
			Lab Sample No.(s)	16995989	16995993	16996000	16996005	16996009	16996015
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		44	22	25	23	23	20
GRO TOT (Moisture Corrected)	<0.044 mg/kg	TM089		0.402 #	0.528 #	0.451 #	0.999 M	0.619 M	0.48 M
Methyl tertiary butyl ether (MTBE)	<0.005 mg/kg	TM089		<0.02 #	<0.02 #	<0.02 #	<0.02 #	<0.02 #	<0.02 #
Benzene	<0.01 mg/kg	TM089		<0.04 #	<0.04 #	<0.04 #	0.0439 M	<0.04 M	<0.04 M
Toluene	<0.002 mg/kg	TM089		0.0241 #	0.0328 #	0.0316 #	0.0384 M	0.0353 M	0.0338 M
Ethylbenzene	<0.003 mg/kg	TM089		<0.012 #	<0.012 #	<0.012 #	<0.012 M	<0.012 M	<0.012 M
m,p-Xylene	<0.006 mg/kg	TM089		0.0285 #	0.0372 #	0.0349 #	0.0439 M	0.0353 M	0.036 M
o-Xylene	<0.003 mg/kg	TM089		<0.012 #	0.0131 #	<0.012 #	0.0132 M	<0.012 M	<0.012 M
sum of detected mpo xylene by GC	<0.009 mg/kg	TM089		0.0285	0.0503	0.0349	0.0571	0.0353	0.036
sum of detected BTEX by GC	<0.024 mg/kg	TM089		0.0526	0.0831	0.0665	0.139	0.0706	0.0698
Aliphatics >C5-C6	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Aliphatics >C6-C8	<0.01 mg/kg	TM089		0.0526	0.0885	0.0644	0.118	0.105	0.0785
Aliphatics >C8-C10	<0.01 mg/kg	TM089		0.0515	0.0732	0.0491	0.102	0.0798	0.0512
Aliphatics >C10-C12	<0.01 mg/kg	TM089		0.101	0.109	0.107	0.326	0.146	0.108
Aliphatics >C12-C16	<0.1 mg/kg	TM173		3	5.42	6.03	6.08	8.23	9.19
Aliphatics >C16-C21	<0.1 mg/kg	TM173		21.1	28.2	44.1	43	62.4	67.9
Aliphatics >C21-C35	<0.1 mg/kg	TM173		38.2	55.8	70.9	72	97.3	84.5
Aliphatics >C35-C44	<0.1 mg/kg	TM173		11	15.6	17.1	16.3	19.6	19.2
Total Aliphatics >C12-C44	<0.1 mg/kg	TM173		73.3	105	138	137	188	181
Aromatics >EC5-EC7	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	0.0439	<0.04	<0.04
Aromatics >EC7-EC8	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Aromatics >EC8-EC10	<0.01 mg/kg	TM089		0.0723	0.102	0.0807	0.125	0.101	0.0839
Aromatics >EC10-EC12	<0.01 mg/kg	TM089		0.0668	0.0721	0.0709	0.217	0.0969	0.0719
Aromatics >EC12-EC16	<0.1 mg/kg	TM173		5.66	8.47	32.8	16.5	17.6	47.4
Aromatics >EC16-EC21	<0.1 mg/kg	TM173		33.2	36.3	120	77.6	97.5	228
Aromatics >EC21-EC35	<0.1 mg/kg	TM173		73.8	79.5	203	166	201	354
Aromatics >EC35-EC44	<0.1 mg/kg	TM173		21.8	24.3	48.6	50.3	45	86.6
Aromatics >EC40-EC44	<0.1 mg/kg	TM173		7.93	9.03	16.7	19.5	17.1	30.5
Total Aromatics >EC12-EC44	<0.1 mg/kg	TM173		134	149	404	310	362	716
Total Aliphatics & Aromatics >C5-C44	<0.1 mg/kg	TM173		208	254	543	449	550	897

CERTIFICATE OF ANALYSIS

SDG:	180206-15	**Client Reference:**		**Report Number:**	445153
Location:	Llanwern	**Order Number:**	LLA396	**Superseded Report:**	

TPH CWG (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	W134-28	W134-29	W134-30			
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00			
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)			
			Date Sampled	05/02/2018	05/02/2018	05/02/2018			
			Sample Time	00:00	00:00	00:00			
			Date Received	06/02/2018	06/02/2018	06/02/2018			
			SDG Ref	180206-15	180206-15	180206-15			
			Lab Sample No.(s)	16996019	16996031	16996036			
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		21	30	22 2			
GRO TOT (Moisture Corrected)	<0.044 mg/kg	TM089		0.632 M	0.603 #	1 2 M			
Methyl tertiary butyl ether (MTBE)	<0.005 mg/kg	TM089		<0.02 #	<0.02 #	<0.02 2 #			
Benzene	<0.01 mg/kg	TM089		<0.04 M	<0.04 #	0.0449 2 M			
Toluene	<0.002 mg/kg	TM089		0.0355 M	0.0361 #	0.0493 2 M			
Ethylbenzene	<0.003 mg/kg	TM089		<0.012 M	<0.012 #	<0.012 2 M			
m,p-Xylene	<0.006 mg/kg	TM089		0.0389 M	0.0382 #	0.0548 2 M			
o-Xylene	<0.003 mg/kg	TM089		0.0144 M	0.0124 #	0.0175 2 M			
sum of detected mpo xylene by GC	<0.009 mg/kg	TM089		0.0533	0.0506	0.0723 2			
sum of detected BTEX by GC	<0.024 mg/kg	TM089		0.0888	0.0867	0.167 2			
Aliphatics >C5-C6	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04 2			
Aliphatics >C6-C8	<0.01 mg/kg	TM089		0.0955	0.0795	0.122 2			
Aliphatics >C8-C10	<0.01 mg/kg	TM089		0.0677	0.0609	0.0997 2			
Aliphatics >C10-C12	<0.01 mg/kg	TM089		0.164	0.169	0.309 2			
Aliphatics >C12-C16	<0.1 mg/kg	TM173		6.06	5.65	8.2			
Aliphatics >C16-C21	<0.1 mg/kg	TM173		40.9	37.3	52.7			
Aliphatics >C21-C35	<0.1 mg/kg	TM173		85.3	73.1	102			
Aliphatics >C35-C44	<0.1 mg/kg	TM173		21.9	18.2	27.3			
Total Aliphatics >C12-C44	<0.1 mg/kg	TM173		154	134	190			
Aromatics >EC5-EC7	<0.01 mg/kg	TM089		<0.04	<0.04	0.0449 2			
Aromatics >EC7-EC8	<0.01 mg/kg	TM089		<0.04	<0.04	0.0493 2			
Aromatics >EC8-EC10	<0.01 mg/kg	TM089		0.0999	0.0929	0.141 2			
Aromatics >EC10-EC12	<0.01 mg/kg	TM089		0.11	0.113	0.206 2			
Aromatics >EC12-EC16	<0.1 mg/kg	TM173		15.5	16.2	25.8			
Aromatics >EC16-EC21	<0.1 mg/kg	TM173		73.6	74.2	116			
Aromatics >EC21-EC35	<0.1 mg/kg	TM173		161	156	240			
Aromatics >EC35-EC44	<0.1 mg/kg	TM173		44.6	41	61.9			
Aromatics >EC40-EC44	<0.1 mg/kg	TM173		16.1	14.5	21.7			
Total Aromatics >EC12-EC44	<0.1 mg/kg	TM173		295	288	444			
Total Aliphatics & Aromatics >C5-C44	<0.1 mg/kg	TM173		450	422	635			

CERTIFICATE OF ANALYSIS

SDG:	180206-15	**Client Reference:**		**Report Number:**	445153
Location:	Llanwern	**Order Number:**	LLA396	**Superseded Report:**	

Asbestos Identification - Solid Samples

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthophyllite	Fibrous Tremolite	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	W134-10 0.00 - 0.00 SOLID 05/02/2018 00:00:00 06/02/2018 12:50:24 180206-15 16995970 TM048	15/02/2018	James Richards	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	W134-12 0.00 - 0.00 SOLID 05/02/2018 00:00:00 06/02/2018 12:13:51 180206-15 16996040 TM048	15/02/2018	Eva Guerra	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	W134-14 0.00 - 0.00 SOLID 05/02/2018 00:00:00 06/02/2018 12:16:59 180206-15 16996058 TM048	15/02/2018	Eva Guerra	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	W134-16 0.00 - 0.00 SOLID 05/02/2018 00:00:00 06/02/2018 13:46:50 180206-15 16996077 TM048	15/02/2018	Barbara Urbanek-Walsh	Loose fibres in soil.	Not Detected (#)	Trace (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	W134-18 0.00 - 0.00 SOLID 05/02/2018 00:00:00 06/02/2018 12:47:30 180206-15 16996087 TM048	15/02/2018	Eva Guerra	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	W134-20 0.00 - 0.00 SOLID 05/02/2018 00:00:00 06/02/2018 13:04:14 180206-15 16995981 TM048	15/02/2018	Eva Guerra	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected

Validated

CERTIFICATE OF ANALYSIS

SDG: 180206-15 **Client Reference:** **Report Number:** 445153
Location: Llanwern **Order Number:** LLA396 **Superseded Report:**

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthophyllite	Fibrous Tremolite	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	W134-22 0.00 - 0.00 SOLID 05/02/2018 00:00:00 06/02/2018 12:59:30 180206-15 16995989 TM048	15/02/2018	Eva Guerra	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	W134-24 0.00 - 0.00 SOLID 05/02/2018 00:00:00 06/02/2018 11:54:29 180206-15 16996000 TM048	15/02/2018	James Richards	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	W134-26 0.00 - 0.00 SOLID 05/02/2018 00:00:00 06/02/2018 12:53:25 180206-15 16996009 TM048	15/02/2018	Eva Guerra	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	W134-28 0.00 - 0.00 SOLID 05/02/2018 00:00:00 06/02/2018 12:19:26 180206-15 16996019 TM048	15/02/2018	Eva Guerra	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	W134-30 0.00 - 0.00 SOLID 05/02/2018 00:00:00 06/02/2018 13:50:15 180206-15 16996036 TM048	15/02/2018	Barbara Urbanek-Walsh	Fibre bundles in soil.	Not Detected (#)	Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected

CERTIFICATE OF ANALYSIS

SDG:	180206-15	**Client Reference:**		**Report Number:**	445153
Location:	Llanwern	**Order Number:**	LLA396	**Superseded Report:**	

Asbestos Quantification - Full

		Additional Asbestos Components (Using TM048)	Analysts Comments	Asbestos Quantification - Gravimetric - %	Asbestos Quantification - PCOM Evaluation - %	Asbestos Quantification - Total - %
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	W134-16 0.00 - 0.00 SOLID 05/02/2018 00:00:00 06/02/2018 13:47:45 180206-15 16996077 TM304	None (#)	N/A	0.0013 (#)	<0.001 (#)	0.0013 (#)
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	W134-30 0.00 - 0.00 SOLID 05/02/2018 00:00:00 06/02/2018 13:51:36 180206-15 16996036 TM304	None (#)	-	<0.001 (#)	<0.001 (#)	<0.001 (#)

CERTIFICATE OF ANALYSIS

SDG:	180206-15	**Client Reference:**		**Report Number:**	445153
Location:	Llanwern	**Order Number:**	LLA396	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.097	**Natural Moisture Content (%)**	7.87
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	92.7
Particle Size <4mm	>95%		

Case	
SDG	180206-15
Lab Sample Number(s)	16995970
Sampled Date	05-Feb-2018
Customer Sample Ref.	W134-10
Depth (m)	0.00 - 0.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	0.046	<0.01	0.46	<0.1	-	-	-
Ammoniacal Nitrogen as N	0.219	<0.2	2.19	<2	-	-	-
pH Value of Filtered Water	10	<0.001	100	<0.01	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Naphthalene (diss.filt)	0.000259	<0.00001	0.00259	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Acenaphthene (diss.filt)	0.0000906	<0.000005	0.000906	<0.00005	-	-	-
Arsenic	0.00393	<0.0005	0.0393	<0.005	-	-	-
Acenaphthylene (diss.filt)	0.000131	<0.000005	0.00131	<0.00005	-	-	-
Fluoranthene (diss.filt)	0.000894	<0.000005	0.00894	<0.00005	-	-	-
Anthracene (diss.filt)	0.000143	<0.000005	0.00143	<0.00005	-	-	-
Iron	0.0222	<0.019	0.222	<0.19	-	-	-
Phenanthrene (diss.filt)	0.00061	<0.000005	0.0061	<0.00005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Fluorene (diss.filt)	0.00014	<0.000005	0.0014	<0.00005	-	-	-
Chrysene (diss.filt)	0.000233	<0.000005	0.00233	<0.00005	-	-	-
Pyrene (diss.filt)	0.000647	<0.000005	0.00647	<0.00005	-	-	-
Benzo(a)anthracene (diss.filt)	0.000207	<0.000005	0.00207	<0.00005	-	-	-
Chromium	0.00198	<0.001	0.0198	<0.01	-	-	-
Benzo(b)fluoranthene (diss.filt)	0.000162	<0.000005	0.00162	<0.00005	-	-	-
Benzo(k)fluoranthene (diss.filt)	0.0000859	<0.000005	0.000859	<0.00005	-	-	-
Benzo(a)pyrene (diss.filt)	0.0000889	<0.000002	0.000889	<0.00002	-	-	-
Copper	0.00579	<0.0003	0.0579	<0.003	-	-	-
Dibenzo(a,h)anthracene (diss.filt)	0.0000119	<0.000005	0.000119	<0.00005	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Benzo(g,h,i)perylene (diss.filt)	0.0000883	<0.000005	0.000883	<0.00005	-	-	-

Leach Test Information

Date Prepared	07-Feb-2018
pH (pH Units)	10.24
Conductivity (µS/cm)	258.00
Temperature (°C)	19.80
Volume Leachant (Litres)	0.893

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180206-15	**Client Reference:**		**Report Number:**	445153
Location:	Llanwern	**Order Number:**	LLA396	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.097	**Natural Moisture Content (%)**	7.87
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	92.7
Particle Size <4mm	>95%		

Case	
SDG	180206-15
Lab Sample Number(s)	16995970
Sampled Date	05-Feb-2018
Customer Sample Ref.	W134-10
Depth (m)	0.00 - 0.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Indeno(1,2,3-cd)pyrene (diss.filt)	0.0000543	<0.000005	0.000543	<0.00005	-	-	-
Manganese	0.00179	<0.001	0.0179	<0.01	-	-	-
PAH 16 EPA Total by GCMS (diss.filt)	0.00385	<0.000082	0.0385	<0.00082	-	-	-
Nickel	0.00123	<0.0004	0.0123	<0.004	-	-	-
Selenium	0.00271	<0.0005	0.0271	<0.005	-	-	-
Vanadium	0.129	<0.001	1.29	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	0.012	<0.01	0.12	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
VOC MS (W)							
Benzene	0.00136	<0.001	0.0136	<0.01	-	-	-
Toluene	0.00116	<0.001	0.0116	<0.01	-	-	-
Ethylbenzene	<0.001	<0.001	<0.01	<0.01	-	-	-
p/m-Xylene	<0.001	<0.001	<0.01	<0.01	-	-	-
o-Xylene	<0.001	<0.001	<0.01	<0.01	-	-	-
Total Xylenes	<0.002	<0.002	<0.02	<0.02	-	-	-

Leach Test Information

Date Prepared	07-Feb-2018
pH (pH Units)	10.24
Conductivity (µS/cm)	258.00
Temperature (°C)	19.80
Volume Leachant (Litres)	0.893

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180206-15	**Client Reference:**		**Report Number:**	445153
Location:	Llanwern	**Order Number:**	LLA396	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.096	**Natural Moisture Content (%)**	6.95
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	93.5
Particle Size <4mm	>95%		

Case	
SDG	180206-15
Lab Sample Number(s)	16995977
Sampled Date	05-Feb-2018
Customer Sample Ref.	W134-19
Depth (m)	0.00 - 0.00

Eluate Analysis	**C_2** Concⁿ in 10:1 eluate (mg/l)		**A_2** 10:1 concⁿ leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	0.01	<0.01	0.1	<0.1	-	-	-
Aromatics >EC16-EC21	0.031	<0.01	0.31	<0.1	-	-	-
Aromatics >EC21-EC35	0.037	<0.01	0.37	<0.1	-	-	-
Aromatics >EC16-EC35	0.068	<0.01	0.68	<0.1	-	-	-
Total Aromatics >EC12-EC35	0.078	<0.01	0.78	<0.1	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	0.082	<0.01	0.82	<0.1	-	-	-
Ammoniacal Nitrogen as N	0.507	<0.2	5.07	<2	-	-	-
pH Value of Filtered Water	9.9	<0.001	99	<0.01	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Naphthalene (diss.filt)	0.00183	<0.00001	0.0183	<0.0001	-	-	-
Total Cyanide (W)	0.148	<0.05	1.48	<0.5	-	-	-
Acenaphthene (diss.filt)	0.000837	<0.000005	0.00837	<0.00005	-	-	-
Arsenic	0.00889	<0.0005	0.0889	<0.005	-	-	-
Acenaphthylene (diss.filt)	0.00176	<0.000005	0.0176	<0.00005	-	-	-
Fluoranthene (diss.filt)	0.00348	<0.000005	0.0348	<0.00005	-	-	-
Anthracene (diss.filt)	0.00101	<0.000005	0.0101	<0.00005	-	-	-
Iron	0.0793	<0.019	0.793	<0.19	-	-	-
Phenanthrene (diss.filt)	0.00474	<0.000005	0.0474	<0.00005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Fluorene (diss.filt)	0.00186	<0.000005	0.0186	<0.00005	-	-	-
Chrysene (diss.filt)	0.000681	<0.000005	0.00681	<0.00005	-	-	-
Pyrene (diss.filt)	0.00223	<0.000005	0.0223	<0.00005	-	-	-
Benzo(a)anthracene (diss.filt)	0.000642	<0.000005	0.00642	<0.00005	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Benzo(b)fluoranthene (diss.filt)	0.000623	<0.000005	0.00623	<0.00005	-	-	-
Benzo(k)fluoranthene (diss.filt)	0.000278	<0.000005	0.00278	<0.00005	-	-	-
Benzo(a)pyrene (diss.filt)	0.000359	<0.000002	0.00359	<0.00002	-	-	-
Copper	0.0138	<0.0003	0.138	<0.003	-	-	-
Dibenzo(a,h)anthracene (diss.filt)	0.0000483	<0.000005	0.000483	<0.00005	-	-	-
Lead	0.000454	<0.0002	0.00454	<0.002	-	-	-
Benzo(g,h,i)perylene (diss.filt)	0.000327	<0.000005	0.00327	<0.00005	-	-	-

Leach Test Information

Date Prepared	07-Feb-2018
pH (pH Units)	9.83
Conductivity (µS/cm)	260.00
Temperature (°C)	19.90
Volume Leachant (Litres)	0.894

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180206-15	**Client Reference:**		**Report Number:**	445153
Location:	Llanwern	**Order Number:**	LLA396	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.096	**Natural Moisture Content (%)**	6.95
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	93.5
Particle Size <4mm	>95%		

Case	
SDG	180206-15
Lab Sample Number(s)	16995977
Sampled Date	05-Feb-2018
Customer Sample Ref.	W134-19
Depth (m)	0.00 - 0.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Indeno(1,2,3-cd)pyrene (diss.filt)	0.000232	<0.000005	0.00232	<0.00005	-	-	-
Manganese	0.00469	<0.001	0.0469	<0.01	-	-	-
PAH 16 EPA Total by GCMS (diss.filt)	0.021	<0.000082	0.21	<0.00082	-	-	-
Nickel	0.00268	<0.0004	0.0268	<0.004	-	-	-
Selenium	0.00652	<0.0005	0.0652	<0.005	-	-	-
Vanadium	0.145	<0.001	1.45	<0.01	-	-	-
Zinc	0.00112	<0.001	0.0112	<0.01	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
VOC MS (W)							
Benzene	0.00121	<0.001	0.0121	<0.01	-	-	-
Toluene	0.00109	<0.001	0.0109	<0.01	-	-	-
Ethylbenzene	<0.001	<0.001	<0.01	<0.01	-	-	-
p/m-Xylene	<0.001	<0.001	<0.01	<0.01	-	-	-
o-Xylene	<0.001	<0.001	<0.01	<0.01	-	-	-
Total Xylenes	<0.002	<0.002	<0.02	<0.02	-	-	-

Leach Test Information

Date Prepared	07-Feb-2018
pH (pH Units)	9.83
Conductivity (µS/cm)	260.00
Temperature (°C)	19.90
Volume Leachant (Litres)	0.894

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180206-15	**Client Reference:**		**Report Number:**	445153
Location:	Llanwern	**Order Number:**	LLA396	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.095	**Natural Moisture Content (%)**	5.04
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	95.2
Particle Size <4mm	>95%		

Case	
SDG	180206-15
Lab Sample Number(s)	16995981
Sampled Date	05-Feb-2018
Customer Sample Ref.	W134-20
Depth (m)	0.00 - 0.00

Eluate Analysis	**C_2** Concⁿ in 10:1 eluate (mg/l)		**A_2** 10:1 concⁿ leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	0.01	<0.01	0.1	<0.1	-	-	-
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
pH Value of Filtered Water	9.9	<0.001	99	<0.01	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Naphthalene (diss.filt)	0.000167	<0.00001	0.00167	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Acenaphthene (diss.filt)	0.0000363	<0.000005	0.000363	<0.00005	-	-	-
Arsenic	0.0041	<0.0005	0.041	<0.005	-	-	-
Acenaphthylene (diss.filt)	0.000069	<0.000005	0.00069	<0.00005	-	-	-
Fluoranthene (diss.filt)	0.00137	<0.000005	0.0137	<0.00005	-	-	-
Anthracene (diss.filt)	0.000171	<0.000005	0.00171	<0.00005	-	-	-
Iron	0.0256	<0.019	0.256	<0.19	-	-	-
Phenanthrene (diss.filt)	0.000744	<0.000005	0.00744	<0.00005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Fluorene (diss.filt)	0.000143	<0.000005	0.00143	<0.00005	-	-	-
Chrysene (diss.filt)	0.000381	<0.000005	0.00381	<0.00005	-	-	-
Pyrene (diss.filt)	0.00114	<0.000005	0.0114	<0.00005	-	-	-
Benzo(a)anthracene (diss.filt)	0.000367	<0.000005	0.00367	<0.00005	-	-	-
Chromium	0.00313	<0.001	0.0313	<0.01	-	-	-
Benzo(b)fluoranthene (diss.filt)	0.000284	<0.000005	0.00284	<0.00005	-	-	-
Benzo(k)fluoranthene (diss.filt)	0.000159	<0.000005	0.00159	<0.00005	-	-	-
Benzo(a)pyrene (diss.filt)	0.00014	<0.000002	0.0014	<0.00002	-	-	-
Copper	0.00479	<0.0003	0.0479	<0.003	-	-	-
Dibenzo(a,h)anthracene (diss.filt)	0.0000286	<0.000005	0.000286	<0.00005	-	-	-
Lead	0.000433	<0.0002	0.00433	<0.002	-	-	-
Benzo(g,h,i)perylene (diss.filt)	0.000118	<0.000005	0.00118	<0.00005	-	-	-

Leach Test Information

Date Prepared	07-Feb-2018
pH (pH Units)	9.93
Conductivity (µS/cm)	238.00
Temperature (°C)	20.60
Volume Leachant (Litres)	0.895

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180206-15	**Client Reference:**		**Report Number:**	445153
Location:	Llanwern	**Order Number:**	LLA396	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.095	**Natural Moisture Content (%)**	5.04
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	95.2
Particle Size <4mm	>95%		

Case	
SDG	180206-15
Lab Sample Number(s)	16995981
Sampled Date	05-Feb-2018
Customer Sample Ref.	W134-20
Depth (m)	0.00 - 0.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Indeno(1,2,3-cd)pyrene (diss.filt)	0.0000934	<0.000005	0.000934	<0.00005	-	-	-
Manganese	0.00881	<0.001	0.0881	<0.01	-	-	-
PAH 16 EPA Total by GCMS (diss.filt)	0.00542	<0.000082	0.0542	<0.00082	-	-	-
Nickel	0.0014	<0.0004	0.014	<0.004	-	-	-
Selenium	0.00212	<0.0005	0.0212	<0.005	-	-	-
Vanadium	0.108	<0.001	1.08	<0.01	-	-	-
Zinc	0.00121	<0.001	0.0121	<0.01	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
Toluene by GC	0.004	<0.004	0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
VOC MS (W)							
Benzene	0.0128	<0.01	0.128	<0.1	-	-	-
Toluene	0.0121	<0.01	0.121	<0.1	-	-	-
Ethylbenzene	<0.01	<0.01	<0.1	<0.1	-	-	-
p/m-Xylene	<0.01	<0.01	<0.1	<0.1	-	-	-
o-Xylene	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Xylenes	<0.02	<0.02	<0.2	<0.2	-	-	-

Leach Test Information

Date Prepared	07-Feb-2018
pH (pH Units)	9.93
Conductivity (µS/cm)	238.00
Temperature (°C)	20.60
Volume Leachant (Litres)	0.895

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180206-15	**Client Reference:**		**Report Number:**	445153
Location:	Llanwern	**Order Number:**	LLA396	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.100	**Natural Moisture Content (%)**	11.1
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	90
Particle Size <4mm	>95%		

Case	
SDG	180206-15
Lab Sample Number(s)	16995985
Sampled Date	05-Feb-2018
Customer Sample Ref.	W134-21
Depth (m)	0.00 - 0.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
pH Value of Filtered Water	10	<0.001	100	<0.01	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Naphthalene (diss.filt)	0.000167	<0.00001	0.00167	<0.0001	-	-	-
Total Cyanide (W)	0.088	<0.05	0.88	<0.5	-	-	-
Acenaphthene (diss.filt)	0.0000304	<0.000005	0.000304	<0.00005	-	-	-
Arsenic	0.00483	<0.0005	0.0483	<0.005	-	-	-
Acenaphthylene (diss.filt)	0.0000631	<0.000005	0.000631	<0.00005	-	-	-
Fluoranthene (diss.filt)	0.000867	<0.000005	0.00867	<0.00005	-	-	-
Anthracene (diss.filt)	0.00012	<0.000005	0.0012	<0.00005	-	-	-
Iron	0.0472	<0.019	0.472	<0.19	-	-	-
Phenanthrene (diss.filt)	0.000524	<0.000005	0.00524	<0.00005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Fluorene (diss.filt)	0.000137	<0.000005	0.00137	<0.00005	-	-	-
Chrysene (diss.filt)	0.000253	<0.000005	0.00253	<0.00005	-	-	-
Pyrene (diss.filt)	0.000697	<0.000005	0.00697	<0.00005	-	-	-
Benzo(a)anthracene (diss.filt)	0.000232	<0.000005	0.00232	<0.00005	-	-	-
Chromium	0.00225	<0.001	0.0225	<0.01	-	-	-
Benzo(b)fluoranthene (diss.filt)	0.000174	<0.000005	0.00174	<0.00005	-	-	-
Benzo(k)fluoranthene (diss.filt)	0.000106	<0.000005	0.00106	<0.00005	-	-	-
Benzo(a)pyrene (diss.filt)	0.0000748	<0.000002	0.000748	<0.00002	-	-	-
Copper	0.00557	<0.0003	0.0557	<0.003	-	-	-
Dibenzo(a,h)anthracene (diss.filt)	0.0000191	<0.000005	0.000191	<0.00005	-	-	-
Lead	0.000206	<0.0002	0.00206	<0.002	-	-	-
Benzo(g,h,i)perylene (diss.filt)	0.0000876	<0.000005	0.000876	<0.00005	-	-	-

Leach Test Information

Date Prepared	07-Feb-2018
pH (pH Units)	9.93
Conductivity (µS/cm)	258.00
Temperature (°C)	20.70
Volume Leachant (Litres)	0.890

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180206-15	**Client Reference:**		**Report Number:**	445153
Location:	Llanwern	**Order Number:**	LLA396	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.100	**Natural Moisture Content (%)**	11.1
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	90
Particle Size <4mm	>95%		

Case	
SDG	180206-15
Lab Sample Number(s)	16995985
Sampled Date	05-Feb-2018
Customer Sample Ref.	W134-21
Depth (m)	0.00 - 0.00

Eluate Analysis	**C_2** Concⁿ in 10:1 eluate (mg/l)		**A_2** 10:1 concⁿ leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Indeno(1,2,3-cd)pyrene (diss.filt)	0.0000674	<0.000005	0.000674	<0.00005	-	-	-
Manganese	0.00251	<0.001	0.0251	<0.01	-	-	-
PAH 16 EPA Total by GCMS (diss.filt)	0.00362	<0.000082	0.0362	<0.00082	-	-	-
Nickel	0.00123	<0.0004	0.0123	<0.004	-	-	-
Selenium	0.00167	<0.0005	0.0167	<0.005	-	-	-
Vanadium	0.105	<0.001	1.05	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
VOC MS (W)							
Benzene	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene	<0.01	<0.01	<0.1	<0.1	-	-	-
Ethylbenzene	<0.01	<0.01	<0.1	<0.1	-	-	-
p/m-Xylene	<0.01	<0.01	<0.1	<0.1	-	-	-
o-Xylene	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Xylenes	<0.02	<0.02	<0.2	<0.2	-	-	-

Leach Test Information

Date Prepared	07-Feb-2018
pH (pH Units)	9.93
Conductivity (µS/cm)	258.00
Temperature (°C)	20.70
Volume Leachant (Litres)	0.890

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180206-15	**Client Reference:**		**Report Number:**	445153
Location:	Llanwern	**Order Number:**	LLA396	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.099	**Natural Moisture Content (%)**	9.53
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	91.3
Particle Size <4mm	>95%		

Case	
SDG	180206-15
Lab Sample Number(s)	16995989
Sampled Date	05-Feb-2018
Customer Sample Ref.	W134-22
Depth (m)	0.00 - 0.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	0.01	<0.01	0.1	<0.1	-	-	-
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
pH Value of Filtered Water	9.7	<0.001	97	<0.01	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Naphthalene (diss.filt)	0.000148	<0.00001	0.00148	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Acenaphthene (diss.filt)	0.0000274	<0.000005	0.000274	<0.00005	-	-	-
Arsenic	0.00555	<0.0005	0.0555	<0.005	-	-	-
Acenaphthylene (diss.filt)	0.0000525	<0.000005	0.000525	<0.00005	-	-	-
Fluoranthene (diss.filt)	0.00101	<0.000005	0.0101	<0.00005	-	-	-
Anthracene (diss.filt)	0.00011	<0.000005	0.0011	<0.00005	-	-	-
Iron	0.0405	<0.019	0.405	<0.19	-	-	-
Phenanthrene (diss.filt)	0.000427	<0.000005	0.00427	<0.00005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Fluorene (diss.filt)	0.000149	<0.000005	0.00149	<0.00005	-	-	-
Chrysene (diss.filt)	0.000267	<0.000005	0.00267	<0.00005	-	-	-
Pyrene (diss.filt)	0.000801	<0.000005	0.00801	<0.00005	-	-	-
Benzo(a)anthracene (diss.filt)	0.000296	<0.000005	0.00296	<0.00005	-	-	-
Chromium	0.00225	<0.001	0.0225	<0.01	-	-	-
Benzo(b)fluoranthene (diss.filt)	0.000268	<0.000005	0.00268	<0.00005	-	-	-
Benzo(k)fluoranthene (diss.filt)	0.000161	<0.000005	0.00161	<0.00005	-	-	-
Benzo(a)pyrene (diss.filt)	0.00015	<0.000002	0.0015	<0.00002	-	-	-
Copper	0.00546	<0.0003	0.0546	<0.003	-	-	-
Dibenzo(a,h)anthracene (diss.filt)	0.0000253	<0.000005	0.000253	<0.00005	-	-	-
Lead	0.00033	<0.0002	0.0033	<0.002	-	-	-
Benzo(g,h,i)perylene (diss.filt)	0.000115	<0.000005	0.00115	<0.00005	-	-	-

Leach Test Information

Date Prepared	07-Feb-2018
pH (pH Units)	9.80
Conductivity (µS/cm)	214.00
Temperature (°C)	20.50
Volume Leachant (Litres)	0.891

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180206-15	**Client Reference:**		**Report Number:**	445153
Location:	Llanwern	**Order Number:**	LLA396	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.099	**Natural Moisture Content (%)**	9.53
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	91.3
Particle Size <4mm	>95%		

Case	
SDG	180206-15
Lab Sample Number(s)	16995989
Sampled Date	05-Feb-2018
Customer Sample Ref.	W134-22
Depth (m)	0.00 - 0.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Indeno(1,2,3-cd)pyrene (diss.filt)	0.0000891	<0.000005	0.000891	<0.00005	-	-	-
Manganese	0.00353	<0.001	0.0353	<0.01	-	-	-
PAH 16 EPA Total by GCMS (diss.filt)	0.0041	<0.000082	0.041	<0.00082	-	-	-
Nickel	0.00114	<0.0004	0.0114	<0.004	-	-	-
Selenium	0.00306	<0.0005	0.0306	<0.005	-	-	-
Vanadium	0.102	<0.001	1.02	<0.01	-	-	-
Zinc	0.00138	<0.001	0.0138	<0.01	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
Toluene by GC	0.004	<0.004	0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
VOC MS (W)							
Benzene	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene	<0.01	<0.01	<0.1	<0.1	-	-	-
Ethylbenzene	<0.01	<0.01	<0.1	<0.1	-	-	-
p/m-Xylene	<0.01	<0.01	<0.1	<0.1	-	-	-
o-Xylene	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Xylenes	<0.02	<0.02	<0.2	<0.2	-	-	-

Leach Test Information

Date Prepared	07-Feb-2018
pH (pH Units)	9.80
Conductivity (µS/cm)	214.00
Temperature (°C)	20.50
Volume Leachant (Litres)	0.891

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180206-15	**Client Reference:**		**Report Number:**	445153
Location:	Llanwern	**Order Number:**	LLA396	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.099	**Natural Moisture Content (%)**	9.29
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	91.5
Particle Size <4mm	>95%		

Case	
SDG	180206-15
Lab Sample Number(s)	16995993
Sampled Date	05-Feb-2018
Customer Sample Ref.	W134-23
Depth (m)	0.00 - 0.00

Eluate Analysis	**C_2** Concⁿ in 10:1 eluate (mg/l)		**A_2** 10:1 concⁿ leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	0.031	<0.01	0.31	<0.1	-	-	-
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
pH Value of Filtered Water	11	<0.001	110	<0.01	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Naphthalene (diss.filt)	0.000237	<0.00001	0.00237	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Acenaphthene (diss.filt)	0.0000341	<0.000005	0.000341	<0.00005	-	-	-
Arsenic	0.00299	<0.0005	0.0299	<0.005	-	-	-
Acenaphthylene (diss.filt)	0.0000708	<0.000005	0.000708	<0.00005	-	-	-
Fluoranthene (diss.filt)	0.000507	<0.000005	0.00507	<0.00005	-	-	-
Anthracene (diss.filt)	0.0000778	<0.000005	0.000778	<0.00005	-	-	-
Iron	0.0343	<0.019	0.343	<0.19	-	-	-
Phenanthrene (diss.filt)	0.000471	<0.000005	0.00471	<0.00005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Fluorene (diss.filt)	0.000119	<0.000005	0.00119	<0.00005	-	-	-
Chrysene (diss.filt)	0.000135	<0.000005	0.00135	<0.00005	-	-	-
Pyrene (diss.filt)	0.000349	<0.000005	0.00349	<0.00005	-	-	-
Benzo(a)anthracene (diss.filt)	0.000114	<0.000005	0.00114	<0.00005	-	-	-
Chromium	0.00312	<0.001	0.0312	<0.01	-	-	-
Benzo(b)fluoranthene (diss.filt)	0.0000612	<0.000005	0.000612	<0.00005	-	-	-
Benzo(k)fluoranthene (diss.filt)	0.0000639	<0.000005	0.000639	<0.00005	-	-	-
Benzo(a)pyrene (diss.filt)	0.0000462	<0.000002	0.000462	<0.00002	-	-	-
Copper	0.0031	<0.0003	0.031	<0.003	-	-	-
Dibenzo(a,h)anthracene (diss.filt)	0.00000797	<0.000005	0.0000797	<0.00005	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Benzo(g,h,i)perylene (diss.filt)	0.0000339	<0.000005	0.000339	<0.00005	-	-	-

Leach Test Information

Date Prepared	07-Feb-2018
pH (pH Units)	10.53
Conductivity (µS/cm)	268.00
Temperature (°C)	20.70
Volume Leachant (Litres)	0.892

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180206-15	**Client Reference:**		**Report Number:**	445153
Location:	Llanwern	**Order Number:**	LLA396	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.099	**Natural Moisture Content (%)**	9.29
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	91.5
Particle Size <4mm	>95%		

Case	
SDG	180206-15
Lab Sample Number(s)	16995993
Sampled Date	05-Feb-2018
Customer Sample Ref.	W134-23
Depth (m)	0.00 - 0.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Indeno(1,2,3-cd)pyrene (diss.filt)	0.0000258	<0.000005	0.000258	<0.00005	-	-	-
Manganese	0.00145	<0.001	0.0145	<0.01	-	-	-
PAH 16 EPA Total by GCMS (diss.filt)	0.00235	<0.000082	0.0235	<0.00082	-	-	-
Nickel	0.00131	<0.0004	0.0131	<0.004	-	-	-
Selenium	0.00187	<0.0005	0.0187	<0.005	-	-	-
Vanadium	0.118	<0.001	1.18	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
VOC MS (W)							
Benzene	0.0105	<0.01	0.105	<0.1	-	-	-
Toluene	0.0136	<0.01	0.136	<0.1	-	-	-
Ethylbenzene	<0.01	<0.01	<0.1	<0.1	-	-	-
p/m-Xylene	0.0108	<0.01	0.108	<0.1	-	-	-
o-Xylene	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Xylenes	<0.02	<0.02	<0.2	<0.2	-	-	-

Leach Test Information

Date Prepared	07-Feb-2018
pH (pH Units)	10.53
Conductivity (µS/cm)	268.00
Temperature (°C)	20.70
Volume Leachant (Litres)	0.892

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180206-15	**Client Reference:**		**Report Number:**	445153
Location:	Llanwern	**Order Number:**	LLA396	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.098	**Natural Moisture Content (%)**	9.05
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	91.7
Particle Size <4mm	>95%		

Case	
SDG	180206-15
Lab Sample Number(s)	16996000
Sampled Date	05-Feb-2018
Customer Sample Ref.	W134-24
Depth (m)	0.00 - 0.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	0.043	<0.01	0.43	<0.1	-	-	-
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
pH Value of Filtered Water	10	<0.001	100	<0.01	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Naphthalene (diss.filt)	0.000301	<0.00001	0.00301	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Acenaphthene (diss.filt)	0.0000721	<0.000005	0.000721	<0.00005	-	-	-
Arsenic	0.0035	<0.0005	0.035	<0.005	-	-	-
Acenaphthylene (diss.filt)	0.000135	<0.000005	0.00135	<0.00005	-	-	-
Fluoranthene (diss.filt)	0.000632	<0.000005	0.00632	<0.00005	-	-	-
Anthracene (diss.filt)	0.000103	<0.000005	0.00103	<0.00005	-	-	-
Iron	0.0235	<0.019	0.235	<0.19	-	-	-
Phenanthrene (diss.filt)	0.000671	<0.000005	0.00671	<0.00005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Fluorene (diss.filt)	0.000297	<0.000005	0.00297	<0.00005	-	-	-
Chrysene (diss.filt)	0.000132	<0.000005	0.00132	<0.00005	-	-	-
Pyrene (diss.filt)	0.000436	<0.000005	0.00436	<0.00005	-	-	-
Benzo(a)anthracene (diss.filt)	0.000126	<0.000005	0.00126	<0.00005	-	-	-
Chromium	0.0027	<0.001	0.027	<0.01	-	-	-
Benzo(b)fluoranthene (diss.filt)	0.0000927	<0.000005	0.000927	<0.00005	-	-	-
Benzo(k)fluoranthene (diss.filt)	0.0000407	<0.000005	0.000407	<0.00005	-	-	-
Benzo(a)pyrene (diss.filt)	0.0000472	<0.000002	0.000472	<0.00002	-	-	-
Copper	0.00543	<0.0003	0.0543	<0.003	-	-	-
Dibenzo(a,h)anthracene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Benzo(g,h,i)perylene (diss.filt)	0.0000443	<0.000005	0.000443	<0.00005	-	-	-

Leach Test Information

Date Prepared	07-Feb-2018
pH (pH Units)	10.24
Conductivity (µS/cm)	252.00
Temperature (°C)	20.10
Volume Leachant (Litres)	0.892

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180206-15	**Client Reference:**		**Report Number:**	445153
Location:	Llanwern	**Order Number:**	LLA396	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.098	**Natural Moisture Content (%)**	9.05
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	91.7
Particle Size <4mm	>95%		

Case	
SDG	180206-15
Lab Sample Number(s)	16996000
Sampled Date	05-Feb-2018
Customer Sample Ref.	W134-24
Depth (m)	0.00 - 0.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Indeno(1,2,3-cd)pyrene (diss.filt)	0.0000288	<0.000005	0.000288	<0.00005	-	-	-
Manganese	0.00149	<0.001	0.0149	<0.01	-	-	-
PAH 16 EPA Total by GCMS (diss.filt)	0.00316	<0.000082	0.0316	<0.00082	-	-	-
Nickel	0.00121	<0.0004	0.0121	<0.004	-	-	-
Selenium	0.00243	<0.0005	0.0243	<0.005	-	-	-
Vanadium	0.131	<0.001	1.31	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	0.011	<0.01	0.11	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
VOC MS (W)							
Benzene	0.00174	<0.001	0.0174	<0.01	-	-	-
Toluene	0.00124	<0.001	0.0124	<0.01	-	-	-
Ethylbenzene	<0.001	<0.001	<0.01	<0.01	-	-	-
p/m-Xylene	0.00105	<0.001	0.0105	<0.01	-	-	-
o-Xylene	<0.001	<0.001	<0.01	<0.01	-	-	-
Total Xylenes	<0.002	<0.002	<0.02	<0.02	-	-	-

Leach Test Information

Date Prepared	07-Feb-2018
pH (pH Units)	10.24
Conductivity (µS/cm)	252.00
Temperature (°C)	20.10
Volume Leachant (Litres)	0.892

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180206-15	**Client Reference:**		**Report Number:**	445153
Location:	Llanwern	**Order Number:**	LLA396	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.099	**Natural Moisture Content (%)**	9.65
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	91.2
Particle Size <4mm	>95%		

Case	
SDG	180206-15
Lab Sample Number(s)	16996005
Sampled Date	05-Feb-2018
Customer Sample Ref.	W134-25
Depth (m)	0.00 - 0.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
pH Value of Filtered Water	10	<0.001	100	<0.01	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Naphthalene (diss.filt)	0.000191	<0.00001	0.00191	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Acenaphthene (diss.filt)	0.0000294	<0.000005	0.000294	<0.00005	-	-	-
Arsenic	0.00239	<0.0005	0.0239	<0.005	-	-	-
Acenaphthylene (diss.filt)	0.0000733	<0.000005	0.000733	<0.00005	-	-	-
Fluoranthene (diss.filt)	0.000389	<0.000005	0.00389	<0.00005	-	-	-
Anthracene (diss.filt)	0.0000676	<0.000005	0.000676	<0.00005	-	-	-
Iron	0.0273	<0.019	0.273	<0.19	-	-	-
Phenanthrene (diss.filt)	0.000397	<0.000005	0.00397	<0.00005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Fluorene (diss.filt)	0.0000981	<0.000005	0.000981	<0.00005	-	-	-
Chrysene (diss.filt)	0.0000942	<0.000005	0.000942	<0.00005	-	-	-
Pyrene (diss.filt)	0.000266	<0.000005	0.00266	<0.00005	-	-	-
Benzo(a)anthracene (diss.filt)	0.0000832	<0.000005	0.000832	<0.00005	-	-	-
Chromium	0.00274	<0.001	0.0274	<0.01	-	-	-
Benzo(b)fluoranthene (diss.filt)	0.0000501	<0.000005	0.000501	<0.00005	-	-	-
Benzo(k)fluoranthene (diss.filt)	0.0000188	<0.000005	0.000188	<0.00005	-	-	-
Benzo(a)pyrene (diss.filt)	0.0000287	<0.000002	0.000287	<0.00002	-	-	-
Copper	0.00455	<0.0003	0.0455	<0.003	-	-	-
Dibenzo(a,h)anthracene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Benzo(g,h,i)perylene (diss.filt)	0.0000307	<0.000005	0.000307	<0.00005	-	-	-

Leach Test Information

Date Prepared	07-Feb-2018
pH (pH Units)	10.48
Conductivity (µS/cm)	268.00
Temperature (°C)	20.10
Volume Leachant (Litres)	0.891

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180206-15	**Client Reference:**		**Report Number:**	445153
Location:	Llanwern	**Order Number:**	LLA396	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.099	**Natural Moisture Content (%)**	9.65
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	91.2
Particle Size <4mm	>95%		

Case	
SDG	180206-15
Lab Sample Number(s)	16996005
Sampled Date	05-Feb-2018
Customer Sample Ref.	W134-25
Depth (m)	0.00 - 0.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Indeno(1,2,3-cd)pyrene (diss.filt)	0.0000175	<0.000005	0.000175	<0.00005	-	-	-
Manganese	0.0015	<0.001	0.015	<0.01	-	-	-
PAH 16 EPA Total by GCMS (diss.filt)	0.00183	<0.000082	0.0183	<0.00082	-	-	-
Nickel	0.00109	<0.0004	0.0109	<0.004	-	-	-
Selenium	0.00259	<0.0005	0.0259	<0.005	-	-	-
Vanadium	0.121	<0.001	1.21	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
VOC MS (W)							
Benzene	0.00174	<0.001	0.0174	<0.01	-	-	-
Toluene	0.00136	<0.001	0.0136	<0.01	-	-	-
Ethylbenzene	<0.001	<0.001	<0.01	<0.01	-	-	-
p/m-Xylene	0.00106	<0.001	0.0106	<0.01	-	-	-
o-Xylene	<0.001	<0.001	<0.01	<0.01	-	-	-
Total Xylenes	<0.002	<0.002	<0.02	<0.02	-	-	-

Leach Test Information

Date Prepared	07-Feb-2018
pH (pH Units)	10.48
Conductivity (µS/cm)	268.00
Temperature (°C)	20.10
Volume Leachant (Litres)	0.891

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180206-15	**Client Reference:**		**Report Number:**	445153
Location:	Llanwern	**Order Number:**	LLA396	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.102	**Natural Moisture Content (%)**	13.6
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	88
Particle Size <4mm	>95%		

Case	
SDG	180206-15
Lab Sample Number(s)	16996009
Sampled Date	05-Feb-2018
Customer Sample Ref.	W134-26
Depth (m)	0.00 - 0.00

Eluate Analysis	**C_2** Concⁿ in 10:1 eluate (mg/l)		**A_2** 10:1 concⁿ leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Ammoniacal Nitrogen as N	0.308	<0.2	3.08	<2	-	-	-
pH Value of Filtered Water	11	<0.001	110	<0.01	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Naphthalene (diss.filt)	0.0022	<0.00001	0.022	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Acenaphthene (diss.filt)	0.000127	<0.000005	0.00127	<0.00005	-	-	-
Arsenic	0.00265	<0.0005	0.0265	<0.005	-	-	-
Acenaphthylene (diss.filt)	0.000311	<0.000005	0.00311	<0.00005	-	-	-
Fluoranthene (diss.filt)	0.00214	<0.000005	0.0214	<0.00005	-	-	-
Anthracene (diss.filt)	0.000399	<0.000005	0.00399	<0.00005	-	-	-
Iron	<0.019	<0.019	<0.19	<0.19	-	-	-
Phenanthrene (diss.filt)	0.00232	<0.000005	0.0232	<0.00005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Fluorene (diss.filt)	0.000565	<0.000005	0.00565	<0.00005	-	-	-
Chrysene (diss.filt)	0.000707	<0.000005	0.00707	<0.00005	-	-	-
Pyrene (diss.filt)	0.00142	<0.000005	0.0142	<0.00005	-	-	-
Benzo(a)anthracene (diss.filt)	0.000621	<0.000005	0.00621	<0.00005	-	-	-
Chromium	0.00248	<0.001	0.0248	<0.01	-	-	-
Benzo(b)fluoranthene (diss.filt)	0.000643	<0.000005	0.00643	<0.00005	-	-	-
Benzo(k)fluoranthene (diss.filt)	0.000284	<0.000005	0.00284	<0.00005	-	-	-
Benzo(a)pyrene (diss.filt)	0.000376	<0.000002	0.00376	<0.00002	-	-	-
Copper	0.00566	<0.0003	0.0566	<0.003	-	-	-
Dibenzo(a,h)anthracene (diss.filt)	0.0000619	<0.000005	0.000619	<0.00005	-	-	-
Lead	0.00568	<0.0002	0.0568	<0.002	-	-	-
Benzo(g,h,i)perylene (diss.filt)	0.000355	<0.000005	0.00355	<0.00005	-	-	-

Leach Test Information

Date Prepared	07-Feb-2018
pH (pH Units)	10.57
Conductivity (µS/cm)	295.00
Temperature (°C)	20.00
Volume Leachant (Litres)	0.888

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180206-15	**Client Reference:**		**Report Number:**	445153
Location:	Llanwern	**Order Number:**	LLA396	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.102	**Natural Moisture Content (%)**	13.6
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	88
Particle Size <4mm	>95%		

Case	
SDG	180206-15
Lab Sample Number(s)	16996009
Sampled Date	05-Feb-2018
Customer Sample Ref.	W134-26
Depth (m)	0.00 - 0.00

Eluate Analysis	**C_2** Concⁿ in 10:1 eluate (mg/l)		**A_2** 10:1 concⁿ leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Indeno(1,2,3-cd)pyrene (diss.filt)	0.000256	<0.000005	0.00256	<0.00005	-	-	-
Manganese	<0.001	<0.001	<0.01	<0.01	-	-	-
PAH 16 EPA Total by GCMS (diss.filt)	0.0128	<0.000082	0.128	<0.00082	-	-	-
Nickel	0.0012	<0.0004	0.012	<0.004	-	-	-
Selenium	0.00193	<0.0005	0.0193	<0.005	-	-	-
Vanadium	0.132	<0.001	1.32	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
VOC MS (W)							
Benzene	0.00256	<0.001	0.0256	<0.01	-	-	-
Toluene	0.00204	<0.001	0.0204	<0.01	-	-	-
Ethylbenzene	<0.001	<0.001	<0.01	<0.01	-	-	-
p/m-Xylene	0.00187	<0.001	0.0187	<0.01	-	-	-
o-Xylene	<0.001	<0.001	<0.01	<0.01	-	-	-
Total Xylenes	<0.002	<0.002	<0.02	<0.02	-	-	-

Leach Test Information

Date Prepared	07-Feb-2018
pH (pH Units)	10.57
Conductivity (µS/cm)	295.00
Temperature (°C)	20.00
Volume Leachant (Litres)	0.888

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180206-15	**Client Reference:**		**Report Number:**	445153
Location:	Llanwern	**Order Number:**	LLA396	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.098	**Natural Moisture Content (%)**	9.05
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	91.7
Particle Size <4mm	>95%		

Case	
SDG	180206-15
Lab Sample Number(s)	16996015
Sampled Date	05-Feb-2018
Customer Sample Ref.	W134-27
Depth (m)	0.00 - 0.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Ammoniacal Nitrogen as N	0.39	<0.2	3.9	<2	-	-	-
pH Value of Filtered Water	11	<0.001	110	<0.01	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00219	<0.0005	0.0219	<0.005	-	-	-
Iron	<0.019	<0.019	<0.19	<0.19	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.0024	<0.001	0.024	<0.01	-	-	-
Copper	0.00655	<0.0003	0.0655	<0.003	-	-	-
Lead	0.000214	<0.0002	0.00214	<0.002	-	-	-
Manganese	0.00133	<0.001	0.0133	<0.01	-	-	-
Nickel	0.00219	<0.0004	0.0219	<0.004	-	-	-
Selenium	0.00251	<0.0005	0.0251	<0.005	-	-	-
Vanadium	0.11	<0.001	1.1	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	07-Feb-2018
pH (pH Units)	10.84
Conductivity (µS/cm)	353.00
Temperature (°C)	19.90
Volume Leachant (Litres)	0.892

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180206-15	**Client Reference:**		**Report Number:**	445153
Location:	Llanwern	**Order Number:**	LLA396	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.098	**Natural Moisture Content (%)**	9.05
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	91.7
Particle Size <4mm	>95%		

Case	
SDG	180206-15
Lab Sample Number(s)	16996015
Sampled Date	05-Feb-2018
Customer Sample Ref.	W134-27
Depth (m)	0.00 - 0.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
VOC MS (W)							
Benzene	0.00119	<0.001	0.0119	<0.01	-	-	-
Toluene	<0.001	<0.001	<0.01	<0.01	-	-	-
Ethylbenzene	<0.001	<0.001	<0.01	<0.01	-	-	-
p/m-Xylene	<0.001	<0.001	<0.01	<0.01	-	-	-
o-Xylene	<0.001	<0.001	<0.01	<0.01	-	-	-
Total Xylenes	<0.002	<0.002	<0.02	<0.02	-	-	-

Leach Test Information

Date Prepared	07-Feb-2018
pH (pH Units)	10.84
Conductivity (µS/cm)	353.00
Temperature (°C)	19.90
Volume Leachant (Litres)	0.892

Mcerts Certification does not apply to leachates

19/02/2018 17:14:04

17:13:27 19/02/2018

CERTIFICATE OF ANALYSIS

SDG:	180206-15	**Client Reference:**		**Report Number:**	445153
Location:	Llanwern	**Order Number:**	LLA396	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.100	**Natural Moisture Content (%)**	10.7
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	90.3
Particle Size <4mm	>95%		

Case	
SDG	180206-15
Lab Sample Number(s)	16996019
Sampled Date	05-Feb-2018
Customer Sample Ref.	W134-28
Depth (m)	0.00 - 0.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	0.027	<0.01	0.27	<0.1	-	-	-
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
pH Value of Filtered Water	10	<0.001	100	<0.01	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Naphthalene (diss.filt)	0.00016	<0.00001	0.0016	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Acenaphthene (diss.filt)	0.0000507	<0.000005	0.000507	<0.00005	-	-	-
Arsenic	0.00373	<0.0005	0.0373	<0.005	-	-	-
Acenaphthylene (diss.filt)	0.000105	<0.000005	0.00105	<0.00005	-	-	-
Fluoranthene (diss.filt)	0.000907	<0.000005	0.00907	<0.00005	-	-	-
Anthracene (diss.filt)	0.000139	<0.000005	0.00139	<0.00005	-	-	-
Iron	0.0297	<0.019	0.297	<0.19	-	-	-
Phenanthrene (diss.filt)	0.000623	<0.000005	0.00623	<0.00005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Fluorene (diss.filt)	0.000213	<0.000005	0.00213	<0.00005	-	-	-
Chrysene (diss.filt)	0.000227	<0.000005	0.00227	<0.00005	-	-	-
Pyrene (diss.filt)	0.000658	<0.000005	0.00658	<0.00005	-	-	-
Benzo(a)anthracene (diss.filt)	0.000223	<0.000005	0.00223	<0.00005	-	-	-
Chromium	0.00294	<0.001	0.0294	<0.01	-	-	-
Benzo(b)fluoranthene (diss.filt)	0.00018	<0.000005	0.0018	<0.00005	-	-	-
Benzo(k)fluoranthene (diss.filt)	0.000125	<0.000005	0.00125	<0.00005	-	-	-
Benzo(a)pyrene (diss.filt)	0.000109	<0.000002	0.00109	<0.00002	-	-	-
Copper	0.00419	<0.0003	0.0419	<0.003	-	-	-
Dibenzo(a,h)anthracene (diss.filt)	0.0000174	<0.000005	0.000174	<0.00005	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Benzo(g,h,i)perylene (diss.filt)	0.0000756	<0.000005	0.000756	<0.00005	-	-	-

Leach Test Information

Date Prepared	07-Feb-2018
pH (pH Units)	9.97
Conductivity (µS/cm)	224.00
Temperature (°C)	20.70
Volume Leachant (Litres)	0.890

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180206-15	**Client Reference:**		**Report Number:**	445153
Location:	Llanwern	**Order Number:**	LLA396	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.100	**Natural Moisture Content (%)**	10.7
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	90.3
Particle Size <4mm	>95%		

Case	
SDG	180206-15
Lab Sample Number(s)	16996019
Sampled Date	05-Feb-2018
Customer Sample Ref.	W134-28
Depth (m)	0.00 - 0.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Indeno(1,2,3-cd)pyrene (diss.filt)	0.0000579	<0.000005	0.000579	<0.00005	-	-	-
Manganese	0.00465	<0.001	0.0465	<0.01	-	-	-
PAH 16 EPA Total by GCMS (diss.filt)	0.00387	<0.000082	0.0387	<0.00082	-	-	-
Nickel	0.00117	<0.0004	0.0117	<0.004	-	-	-
Selenium	0.00241	<0.0005	0.0241	<0.005	-	-	-
Vanadium	0.0989	<0.001	0.989	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
Toluene by GC	0.004	<0.004	0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
VOC MS (W)							
Benzene	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene	<0.01	<0.01	<0.1	<0.1	-	-	-
Ethylbenzene	<0.01	<0.01	<0.1	<0.1	-	-	-
p/m-Xylene	<0.01	<0.01	<0.1	<0.1	-	-	-
o-Xylene	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Xylenes	<0.02	<0.02	<0.2	<0.2	-	-	-

Leach Test Information

Date Prepared	07-Feb-2018
pH (pH Units)	9.97
Conductivity (µS/cm)	224.00
Temperature (°C)	20.70
Volume Leachant (Litres)	0.890

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180206-15	**Client Reference:**		**Report Number:**	445153
Location:	Llanwern	**Order Number:**	LLA396	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.098	**Natural Moisture Content (%)**	8.46
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	92.2
Particle Size <4mm	>95%		

Case	
SDG	180206-15
Lab Sample Number(s)	16996026
Sampled Date	05-Feb-2018
Customer Sample Ref.	W134-11
Depth (m)	0.00 - 0.00

Eluate Analysis	**C_2** Concⁿ in 10:1 eluate (mg/l)		**A_2** 10:1 concⁿ leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
pH Value of Filtered Water	11	<0.001	110	<0.01	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Naphthalene (diss.filt)	0.000163	<0.00001	0.00163	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Acenaphthene (diss.filt)	0.0000183	<0.000005	0.000183	<0.00005	-	-	-
Arsenic	0.00242	<0.0005	0.0242	<0.005	-	-	-
Acenaphthylene (diss.filt)	0.0000472	<0.000005	0.000472	<0.00005	-	-	-
Fluoranthene (diss.filt)	0.000221	<0.000005	0.00221	<0.00005	-	-	-
Anthracene (diss.filt)	0.0000279	<0.000005	0.000279	<0.00005	-	-	-
Iron	<0.019	<0.019	<0.19	<0.19	-	-	-
Phenanthrene (diss.filt)	0.000178	<0.000005	0.00178	<0.00005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Fluorene (diss.filt)	0.0000468	<0.000005	0.000468	<0.00005	-	-	-
Chrysene (diss.filt)	0.0000619	<0.000005	0.000619	<0.00005	-	-	-
Pyrene (diss.filt)	0.000187	<0.000005	0.00187	<0.00005	-	-	-
Benzo(a)anthracene (diss.filt)	0.0000526	<0.000005	0.000526	<0.00005	-	-	-
Chromium	0.0031	<0.001	0.031	<0.01	-	-	-
Benzo(b)fluoranthene (diss.filt)	0.0000437	<0.000005	0.000437	<0.00005	-	-	-
Benzo(k)fluoranthene (diss.filt)	0.0000125	<0.000005	0.000125	<0.00005	-	-	-
Benzo(a)pyrene (diss.filt)	0.0000179	<0.000002	0.000179	<0.00002	-	-	-
Copper	0.00449	<0.0003	0.0449	<0.003	-	-	-
Dibenzo(a,h)anthracene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Benzo(g,h,i)perylene (diss.filt)	0.0000235	<0.000005	0.000235	<0.00005	-	-	-

Leach Test Information

Date Prepared	07-Feb-2018
pH (pH Units)	10.59
Conductivity (µS/cm)	296.00
Temperature (°C)	20.00
Volume Leachant (Litres)	0.892

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180206-15	**Client Reference:**		**Report Number:**	445153
Location:	Llanwern	**Order Number:**	LLA396	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.098	**Natural Moisture Content (%)**	8.46
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	92.2
Particle Size <4mm	>95%		

Case	
SDG	180206-15
Lab Sample Number(s)	16996026
Sampled Date	05-Feb-2018
Customer Sample Ref.	W134-11
Depth (m)	0.00 - 0.00

Eluate Analysis	**C_2** Concⁿ in 10:1 eluate (mg/l)		**A_2** 10:1 concⁿ leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Indeno(1,2,3-cd)pyrene (diss.filt)	0.0000137	<0.000005	0.000137	<0.00005	-	-	-
Manganese	<0.001	<0.001	<0.01	<0.01	-	-	-
PAH 16 EPA Total by GCMS (diss.filt)	0.00111	<0.000082	0.0111	<0.00082	-	-	-
Nickel	0.000933	<0.0004	0.00933	<0.004	-	-	-
Selenium	0.0023	<0.0005	0.023	<0.005	-	-	-
Vanadium	0.12	<0.001	1.2	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
VOC MS (W)							
Benzene	0.00113	<0.001	0.0113	<0.01	-	-	-
Toluene	0.00111	<0.001	0.0111	<0.01	-	-	-
Ethylbenzene	<0.001	<0.001	<0.01	<0.01	-	-	-
p/m-Xylene	<0.001	<0.001	<0.01	<0.01	-	-	-
o-Xylene	<0.001	<0.001	<0.01	<0.01	-	-	-
Total Xylenes	<0.002	<0.002	<0.02	<0.02	-	-	-

Leach Test Information

Date Prepared	07-Feb-2018
pH (pH Units)	10.59
Conductivity (µS/cm)	296.00
Temperature (°C)	20.00
Volume Leachant (Litres)	0.892

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180206-15	**Client Reference:**		**Report Number:**	445153
Location:	Llanwern	**Order Number:**	LLA396	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.096	**Natural Moisture Content (%)**	6.5
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	93.9
Particle Size <4mm	>95%		

Case	
SDG	180206-15
Lab Sample Number(s)	16996031
Sampled Date	05-Feb-2018
Customer Sample Ref.	W134-29
Depth (m)	0.00 - 0.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
pH Value of Filtered Water	10	<0.001	100	<0.01	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Naphthalene (diss.filt)	0.000334	<0.00001	0.00334	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Acenaphthene (diss.filt)	0.0000481	<0.000005	0.000481	<0.00005	-	-	-
Arsenic	0.00346	<0.0005	0.0346	<0.005	-	-	-
Acenaphthylene (diss.filt)	0.0000978	<0.000005	0.000978	<0.00005	-	-	-
Fluoranthene (diss.filt)	0.000826	<0.000005	0.00826	<0.00005	-	-	-
Anthracene (diss.filt)	0.000128	<0.000005	0.00128	<0.00005	-	-	-
Iron	0.021	<0.019	0.21	<0.19	-	-	-
Phenanthrene (diss.filt)	0.000674	<0.000005	0.00674	<0.00005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Fluorene (diss.filt)	0.000226	<0.000005	0.00226	<0.00005	-	-	-
Chrysene (diss.filt)	0.000224	<0.000005	0.00224	<0.00005	-	-	-
Pyrene (diss.filt)	0.000608	<0.000005	0.00608	<0.00005	-	-	-
Benzo(a)anthracene (diss.filt)	0.000211	<0.000005	0.00211	<0.00005	-	-	-
Chromium	0.00222	<0.001	0.0222	<0.01	-	-	-
Benzo(b)fluoranthene (diss.filt)	0.000187	<0.000005	0.00187	<0.00005	-	-	-
Benzo(k)fluoranthene (diss.filt)	0.000081	<0.000005	0.00081	<0.00005	-	-	-
Benzo(a)pyrene (diss.filt)	0.0000851	<0.000002	0.000851	<0.00002	-	-	-
Copper	0.00449	<0.0003	0.0449	<0.003	-	-	-
Dibenzo(a,h)anthracene (diss.filt)	0.0000118	<0.000005	0.000118	<0.00005	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Benzo(g,h,i)perylene (diss.filt)	0.0000764	<0.000005	0.000764	<0.00005	-	-	-

Leach Test Information

Date Prepared	08-Feb-2018
pH (pH Units)	9.46
Conductivity (µS/cm)	202.00
Temperature (°C)	20.10
Volume Leachant (Litres)	0.894

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180206-15	**Client Reference:**		**Report Number:**	445153
Location:	Llanwern	**Order Number:**	LLA396	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.096	**Natural Moisture Content (%)**	6.5
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	93.9
Particle Size <4mm	>95%		

Case	
SDG	180206-15
Lab Sample Number(s)	16996031
Sampled Date	05-Feb-2018
Customer Sample Ref.	W134-29
Depth (m)	0.00 - 0.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Indeno(1,2,3-cd)pyrene (diss.filt)	0.0000528	<0.000005	0.000528	<0.00005	-	-	-
Manganese	0.00209	<0.001	0.0209	<0.01	-	-	-
PAH 16 EPA Total by GCMS (diss.filt)	0.00387	<0.000082	0.0387	<0.00082	-	-	-
Nickel	0.000913	<0.0004	0.00913	<0.004	-	-	-
Selenium	0.00225	<0.0005	0.0225	<0.005	-	-	-
Vanadium	0.113	<0.001	1.13	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
VOC MS (W)							
Benzene	0.00214	<0.001	0.0214	<0.01	-	-	-
Toluene	0.0018	<0.001	0.018	<0.01	-	-	-
Ethylbenzene	<0.001	<0.001	<0.01	<0.01	-	-	-
p/m-Xylene	0.0017	<0.001	0.017	<0.01	-	-	-
o-Xylene	<0.001	<0.001	<0.01	<0.01	-	-	-
Total Xylenes	<0.002	<0.002	<0.02	<0.02	-	-	-

Leach Test Information

Date Prepared	08-Feb-2018
pH (pH Units)	9.46
Conductivity (µS/cm)	202.00
Temperature (°C)	20.10
Volume Leachant (Litres)	0.894

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180206-15	**Client Reference:**		**Report Number:**	445153
Location:	Llanwern	**Order Number:**	LLA396	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.099	**Natural Moisture Content (%)**	9.65
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	91.2
Particle Size <4mm	>95%		

Case	
SDG	180206-15
Lab Sample Number(s)	16996036
Sampled Date	05-Feb-2018
Customer Sample Ref.	W134-30
Depth (m)	0.00 - 0.00

Eluate Analysis	**C_2** Concⁿ in 10:1 eluate (mg/l)		**A_2** 10:1 concⁿ leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	0.046	<0.01	0.46	<0.1	-	-	-
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
pH Value of Filtered Water	10	<0.001	100	<0.01	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Naphthalene (diss.filt)	0.000465	<0.00001	0.00465	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Acenaphthene (diss.filt)	0.0000599	<0.000005	0.000599	<0.00005	-	-	-
Arsenic	0.00308	<0.0005	0.0308	<0.005	-	-	-
Acenaphthylene (diss.filt)	0.000116	<0.000005	0.00116	<0.00005	-	-	-
Fluoranthene (diss.filt)	0.00106	<0.000005	0.0106	<0.00005	-	-	-
Anthracene (diss.filt)	0.000143	<0.000005	0.00143	<0.00005	-	-	-
Iron	0.0229	<0.019	0.229	<0.19	-	-	-
Phenanthrene (diss.filt)	0.001	<0.000005	0.01	<0.00005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Fluorene (diss.filt)	0.000309	<0.000005	0.00309	<0.00005	-	-	-
Chrysene (diss.filt)	0.000226	<0.000005	0.00226	<0.00005	-	-	-
Pyrene (diss.filt)	0.000938	<0.000005	0.00938	<0.00005	-	-	-
Benzo(a)anthracene (diss.filt)	0.000205	<0.000005	0.00205	<0.00005	-	-	-
Chromium	0.00229	<0.001	0.0229	<0.01	-	-	-
Benzo(b)fluoranthene (diss.filt)	0.000154	<0.000005	0.00154	<0.00005	-	-	-
Benzo(k)fluoranthene (diss.filt)	0.0000744	<0.000005	0.000744	<0.00005	-	-	-
Benzo(a)pyrene (diss.filt)	0.0000801	<0.000002	0.000801	<0.00002	-	-	-
Copper	0.00469	<0.0003	0.0469	<0.003	-	-	-
Dibenzo(a,h)anthracene (diss.filt)	0.0000103	<0.000005	0.000103	<0.00005	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Benzo(g,h,i)perylene (diss.filt)	0.0000775	<0.000005	0.000775	<0.00005	-	-	-

Leach Test Information

Date Prepared	08-Feb-2018
pH (pH Units)	10.03
Conductivity (µS/cm)	241.00
Temperature (°C)	20.20
Volume Leachant (Litres)	0.891

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180206-15	**Client Reference:**		**Report Number:**	445153
Location:	Llanwern	**Order Number:**	LLA396	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.099	**Natural Moisture Content (%)**	9.65
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	91.2
Particle Size <4mm	>95%		

Case	
SDG	180206-15
Lab Sample Number(s)	16996036
Sampled Date	05-Feb-2018
Customer Sample Ref.	W134-30
Depth (m)	0.00 - 0.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Indeno(1,2,3-cd)pyrene (diss.filt)	0.0000414	<0.000005	0.000414	<0.00005	-	-	-
Manganese	0.00161	<0.001	0.0161	<0.01	-	-	-
PAH 16 EPA Total by GCMS (diss.filt)	0.00496	<0.000082	0.0496	<0.00082	-	-	-
Nickel	0.00101	<0.0004	0.0101	<0.004	-	-	-
Selenium	0.00222	<0.0005	0.0222	<0.005	-	-	-
Vanadium	0.104	<0.001	1.04	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	0.013	<0.01	0.13	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
VOC MS (W)							
Benzene	0.00151	<0.001	0.0151	<0.01	-	-	-
Toluene	0.00117	<0.001	0.0117	<0.01	-	-	-
Ethylbenzene	<0.001	<0.001	<0.01	<0.01	-	-	-
p/m-Xylene	<0.001	<0.001	<0.01	<0.01	-	-	-
o-Xylene	<0.001	<0.001	<0.01	<0.01	-	-	-
Total Xylenes	<0.002	<0.002	<0.02	<0.02	-	-	-

Leach Test Information

Date Prepared	08-Feb-2018
pH (pH Units)	10.03
Conductivity (µS/cm)	241.00
Temperature (°C)	20.20
Volume Leachant (Litres)	0.891

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180206-15	**Client Reference:**		**Report Number:**	445153
Location:	Llanwern	**Order Number:**	LLA396	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.099	**Natural Moisture Content (%)**	10.1
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	90.8
Particle Size <4mm	>95%		

Case	
SDG	180206-15
Lab Sample Number(s)	16996040
Sampled Date	05-Feb-2018
Customer Sample Ref.	W134-12
Depth (m)	0.00 - 0.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
pH Value of Filtered Water	10	<0.001	100	<0.01	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Naphthalene (diss.filt)	0.000162	<0.00001	0.00162	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Acenaphthene (diss.filt)	0.0000264	<0.000005	0.000264	<0.00005	-	-	-
Arsenic	0.00302	<0.0005	0.0302	<0.005	-	-	-
Acenaphthylene (diss.filt)	0.0000688	<0.000005	0.000688	<0.00005	-	-	-
Fluoranthene (diss.filt)	0.000743	<0.000005	0.00743	<0.00005	-	-	-
Anthracene (diss.filt)	0.000125	<0.000005	0.00125	<0.00005	-	-	-
Iron	0.0201	<0.019	0.201	<0.19	-	-	-
Phenanthrene (diss.filt)	0.000579	<0.000005	0.00579	<0.00005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Fluorene (diss.filt)	0.000104	<0.000005	0.00104	<0.00005	-	-	-
Chrysene (diss.filt)	0.00022	<0.000005	0.0022	<0.00005	-	-	-
Pyrene (diss.filt)	0.000509	<0.000005	0.00509	<0.00005	-	-	-
Benzo(a)anthracene (diss.filt)	0.000201	<0.000005	0.00201	<0.00005	-	-	-
Chromium	0.00205	<0.001	0.0205	<0.01	-	-	-
Benzo(b)fluoranthene (diss.filt)	0.00018	<0.000005	0.0018	<0.00005	-	-	-
Benzo(k)fluoranthene (diss.filt)	0.0000769	<0.000005	0.000769	<0.00005	-	-	-
Benzo(a)pyrene (diss.filt)	0.0000828	<0.000002	0.000828	<0.00002	-	-	-
Copper	0.00431	<0.0003	0.0431	<0.003	-	-	-
Dibenzo(a,h)anthracene (diss.filt)	0.0000113	<0.000005	0.000113	<0.00005	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Benzo(g,h,i)perylene (diss.filt)	0.0000695	<0.000005	0.000695	<0.00005	-	-	-

Leach Test Information

Date Prepared	08-Feb-2018
pH (pH Units)	10.26
Conductivity (µS/cm)	222.00
Temperature (°C)	20.20
Volume Leachant (Litres)	0.891

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180206-15	**Client Reference:**		**Report Number:**	445153
Location:	Llanwern	**Order Number:**	LLA396	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.099	**Natural Moisture Content (%)**	10.1
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	90.8
Particle Size <4mm	>95%		

Case	
SDG	180206-15
Lab Sample Number(s)	16996040
Sampled Date	05-Feb-2018
Customer Sample Ref.	W134-12
Depth (m)	0.00 - 0.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Indeno(1,2,3-cd)pyrene (diss.filt)	0.0000496	<0.000005	0.000496	<0.00005	-	-	-
Manganese	0.00193	<0.001	0.0193	<0.01	-	-	-
PAH 16 EPA Total by GCMS (diss.filt)	0.00321	<0.000082	0.0321	<0.00082	-	-	-
Nickel	0.000865	<0.0004	0.00865	<0.004	-	-	-
Selenium	0.00207	<0.0005	0.0207	<0.005	-	-	-
Vanadium	0.132	<0.001	1.32	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
VOC MS (W)							
Benzene	0.0017	<0.001	0.017	<0.01	-	-	-
Toluene	0.0014	<0.001	0.014	<0.01	-	-	-
Ethylbenzene	<0.001	<0.001	<0.01	<0.01	-	-	-
p/m-Xylene	0.00121	<0.001	0.0121	<0.01	-	-	-
o-Xylene	<0.001	<0.001	<0.01	<0.01	-	-	-
Total Xylenes	<0.002	<0.002	<0.02	<0.02	-	-	-

Leach Test Information

Date Prepared	08-Feb-2018
pH (pH Units)	10.26
Conductivity (µS/cm)	222.00
Temperature (°C)	20.20
Volume Leachant (Litres)	0.891

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180206-15	**Client Reference:**		**Report Number:**	445153
Location:	Llanwern	**Order Number:**	LLA396	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.102	**Natural Moisture Content (%)**	13.6
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	88
Particle Size <4mm	>95%		

Case	
SDG	180206-15
Lab Sample Number(s)	16996045
Sampled Date	05-Feb-2018
Customer Sample Ref.	W134-13
Depth (m)	0.00 - 0.00

Eluate Analysis	**C_2** Concⁿ in 10:1 eluate (mg/l)		**A_2** 10:1 concⁿ leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	0.012	<0.01	0.12	<0.1	-	-	-
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
pH Value of Filtered Water	11	<0.001	110	<0.01	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Naphthalene (diss.filt)	0.0000123	<0.00001	0.000123	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Acenaphthene (diss.filt)	0.00000612	<0.000005	0.0000612	<0.00005	-	-	-
Arsenic	0.00826	<0.0005	0.0826	<0.005	-	-	-
Acenaphthylene (diss.filt)	0.00000526	<0.000005	0.0000526	<0.00005	-	-	-
Fluoranthene (diss.filt)	0.0000615	<0.000005	0.000615	<0.00005	-	-	-
Anthracene (diss.filt)	0.00000745	<0.000005	0.0000745	<0.00005	-	-	-
Iron	0.0264	<0.019	0.264	<0.19	-	-	-
Phenanthrene (diss.filt)	0.0000404	<0.000005	0.000404	<0.00005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Fluorene (diss.filt)	0.000012	<0.000005	0.00012	<0.00005	-	-	-
Chrysene (diss.filt)	0.00000732	<0.000005	0.0000732	<0.00005	-	-	-
Pyrene (diss.filt)	0.0000418	<0.000005	0.000418	<0.00005	-	-	-
Benzo(a)anthracene (diss.filt)	0.0000089	<0.000005	0.000089	<0.00005	-	-	-
Chromium	0.00411	<0.001	0.0411	<0.01	-	-	-
Benzo(b)fluoranthene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene (diss.filt)	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Copper	0.000718	<0.0003	0.00718	<0.003	-	-	-
Dibenzo(a,h)anthracene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Benzo(g,h,i)perylene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-

Leach Test Information

Date Prepared	07-Feb-2018
pH (pH Units)	10.50
Conductivity (µS/cm)	214.00
Temperature (°C)	20.80
Volume Leachant (Litres)	0.888

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180206-15	**Client Reference:**		**Report Number:**	445153
Location:	Llanwern	**Order Number:**	LLA396	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.102	**Natural Moisture Content (%)**	13.6
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	88
Particle Size <4mm	>95%		

Case	
SDG	180206-15
Lab Sample Number(s)	16996045
Sampled Date	05-Feb-2018
Customer Sample Ref.	W134-13
Depth (m)	0.00 - 0.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Indeno(1,2,3-cd)pyrene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Manganese	<0.001	<0.001	<0.01	<0.01	-	-	-
PAH 16 EPA Total by GCMS (diss.filt)	0.000203	<0.000082	0.00203	<0.00082	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	0.0019	<0.0005	0.019	<0.005	-	-	-
Vanadium	0.0299	<0.001	0.299	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
VOC MS (W)							
Benzene	<0.001	<0.001	<0.01	<0.01	-	-	-
Toluene	<0.001	<0.001	<0.01	<0.01	-	-	-
Ethylbenzene	<0.001	<0.001	<0.01	<0.01	-	-	-
p/m-Xylene	<0.001	<0.001	<0.01	<0.01	-	-	-
o-Xylene	<0.001	<0.001	<0.01	<0.01	-	-	-
Total Xylenes	<0.002	<0.002	<0.02	<0.02	-	-	-

Leach Test Information

Date Prepared	07-Feb-2018
pH (pH Units)	10.50
Conductivity (µS/cm)	214.00
Temperature (°C)	20.80
Volume Leachant (Litres)	0.888

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180206-15	**Client Reference:**		**Report Number:**	445153
Location:	Llanwern	**Order Number:**	LLA396	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.101	**Natural Moisture Content (%)**	12.4
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	89
Particle Size <4mm	>95%		

Case	
SDG	180206-15
Lab Sample Number(s)	16996058
Sampled Date	05-Feb-2018
Customer Sample Ref.	W134-14
Depth (m)	0.00 - 0.00

Eluate Analysis	**C_2** Concⁿ in 10:1 eluate (mg/l)		**A_2** 10:1 concⁿ leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	0.038	<0.01	0.38	<0.1	-	-	-
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
pH Value of Filtered Water	10	<0.001	100	<0.01	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Naphthalene (diss.filt)	0.000186	<0.00001	0.00186	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Acenaphthene (diss.filt)	0.000024	<0.000005	0.00024	<0.00005	-	-	-
Arsenic	0.00401	<0.0005	0.0401	<0.005	-	-	-
Acenaphthylene (diss.filt)	0.0000713	<0.000005	0.000713	<0.00005	-	-	-
Fluoranthene (diss.filt)	0.000447	<0.000005	0.00447	<0.00005	-	-	-
Anthracene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Iron	<0.019	<0.019	<0.19	<0.19	-	-	-
Phenanthrene (diss.filt)	0.000357	<0.000005	0.00357	<0.00005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Fluorene (diss.filt)	0.000102	<0.000005	0.00102	<0.00005	-	-	-
Chrysene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene (diss.filt)	0.00033	<0.000005	0.0033	<0.00005	-	-	-
Benzo(a)anthracene (diss.filt)	0.000111	<0.000005	0.00111	<0.00005	-	-	-
Chromium	0.00162	<0.001	0.0162	<0.01	-	-	-
Benzo(b)fluoranthene (diss.filt)	0.0000558	<0.000005	0.000558	<0.00005	-	-	-
Benzo(k)fluoranthene (diss.filt)	0.0000728	<0.000005	0.000728	<0.00005	-	-	-
Benzo(a)pyrene (diss.filt)	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Copper	0.00485	<0.0003	0.0485	<0.003	-	-	-
Dibenzo(a,h)anthracene (diss.filt)	0.0000053	<0.000005	0.000053	<0.00005	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Benzo(g,h,i)perylene (diss.filt)	0.0000424	<0.000005	0.000424	<0.00005	-	-	-

Leach Test Information

Date Prepared	08-Feb-2018
pH (pH Units)	10.22
Conductivity (µS/cm)	240.00
Temperature (°C)	19.80
Volume Leachant (Litres)	0.889

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180206-15	**Client Reference:**		**Report Number:**	445153
Location:	Llanwern	**Order Number:**	LLA396	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.101	**Natural Moisture Content (%)**	12.4
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	89
Particle Size <4mm	>95%		

Case	
SDG	180206-15
Lab Sample Number(s)	16996058
Sampled Date	05-Feb-2018
Customer Sample Ref.	W134-14
Depth (m)	0.00 - 0.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Indeno(1,2,3-cd)pyrene (diss.filt)	0.0000219	<0.000005	0.000219	<0.00005	-	-	-
Manganese	0.00214	<0.001	0.0214	<0.01	-	-	-
PAH 16 EPA Total by GCMS (diss.filt)	0.00183	<0.000082	0.0183	<0.00082	-	-	-
Nickel	0.000831	<0.0004	0.00831	<0.004	-	-	-
Selenium	0.0025	<0.0005	0.025	<0.005	-	-	-
Vanadium	0.133	<0.001	1.33	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
VOC MS (W)							
Benzene	0.00146	<0.001	0.0146	<0.01	-	-	-
Toluene	0.0012	<0.001	0.012	<0.01	-	-	-
Ethylbenzene	<0.001	<0.001	<0.01	<0.01	-	-	-
p/m-Xylene	<0.001	<0.001	<0.01	<0.01	-	-	-
o-Xylene	<0.001	<0.001	<0.01	<0.01	-	-	-
Total Xylenes	<0.002	<0.002	<0.02	<0.02	-	-	-

Leach Test Information

Date Prepared	08-Feb-2018
pH (pH Units)	10.22
Conductivity (µS/cm)	240.00
Temperature (°C)	19.80
Volume Leachant (Litres)	0.889

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180206-15	**Client Reference:**		**Report Number:**	445153
Location:	Llanwern	**Order Number:**	LLA396	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.100	**Natural Moisture Content (%)**	11.1
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	90
Particle Size <4mm	>95%		

Case	
SDG	180206-15
Lab Sample Number(s)	16996072
Sampled Date	05-Feb-2018
Customer Sample Ref.	W134-15
Depth (m)	0.00 - 0.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	0.02	<0.01	0.2	<0.1	-	-	-
Aromatics >EC21-EC35	0.032	<0.01	0.32	<0.1	-	-	-
Aromatics >EC16-EC35	0.052	<0.01	0.52	<0.1	-	-	-
Total Aromatics >EC12-EC35	0.052	<0.01	0.52	<0.1	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	0.057	<0.01	0.57	<0.1	-	-	-
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
pH Value of Filtered Water	9.9	<0.001	99	<0.01	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Naphthalene (diss.filt)	0.000168	<0.00001	0.00168	<0.0001	-	-	-
Total Cyanide (W)	0.082	<0.05	0.82	<0.5	-	-	-
Acenaphthene (diss.filt)	0.000126	<0.000005	0.00126	<0.00005	-	-	-
Arsenic	0.00587	<0.0005	0.0587	<0.005	-	-	-
Acenaphthylene (diss.filt)	0.000178	<0.000005	0.00178	<0.00005	-	-	-
Fluoranthene (diss.filt)	0.00151	<0.000005	0.0151	<0.00005	-	-	-
Anthracene (diss.filt)	0.000291	<0.000005	0.00291	<0.00005	-	-	-
Iron	0.0576	<0.019	0.576	<0.19	-	-	-
Phenanthrene (diss.filt)	0.000713	<0.000005	0.00713	<0.00005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Fluorene (diss.filt)	0.000271	<0.000005	0.00271	<0.00005	-	-	-
Chrysene (diss.filt)	0.000437	<0.000005	0.00437	<0.00005	-	-	-
Pyrene (diss.filt)	0.00117	<0.000005	0.0117	<0.00005	-	-	-
Benzo(a)anthracene (diss.filt)	0.00039	<0.000005	0.0039	<0.00005	-	-	-
Chromium	0.0019	<0.001	0.019	<0.01	-	-	-
Benzo(b)fluoranthene (diss.filt)	0.000426	<0.000005	0.00426	<0.00005	-	-	-
Benzo(k)fluoranthene (diss.filt)	0.000198	<0.000005	0.00198	<0.00005	-	-	-
Benzo(a)pyrene (diss.filt)	0.000224	<0.000002	0.00224	<0.00002	-	-	-
Copper	0.00663	<0.0003	0.0663	<0.003	-	-	-
Dibenzo(a,h)anthracene (diss.filt)	0.0000359	<0.000005	0.000359	<0.00005	-	-	-
Lead	0.000261	<0.0002	0.00261	<0.002	-	-	-
Benzo(g,h,i)perylene (diss.filt)	0.000234	<0.000005	0.00234	<0.00005	-	-	-

Leach Test Information

Date Prepared	07-Feb-2018
pH (pH Units)	9.97
Conductivity (µS/cm)	221.00
Temperature (°C)	19.80
Volume Leachant (Litres)	0.890

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180206-15	**Client Reference:**		**Report Number:**	445153
Location:	Llanwern	**Order Number:**	LLA396	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.100	**Natural Moisture Content (%)**	11.1
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	90
Particle Size <4mm	>95%		

Case	
SDG	180206-15
Lab Sample Number(s)	16996072
Sampled Date	05-Feb-2018
Customer Sample Ref.	W134-15
Depth (m)	0.00 - 0.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Indeno(1,2,3-cd)pyrene (diss.filt)	0.000164	<0.000005	0.00164	<0.00005	-	-	-
Manganese	0.00302	<0.001	0.0302	<0.01	-	-	-
PAH 16 EPA Total by GCMS (diss.filt)	0.00654	<0.000082	0.0654	<0.00082	-	-	-
Nickel	0.0013	<0.0004	0.013	<0.004	-	-	-
Selenium	0.00329	<0.0005	0.0329	<0.005	-	-	-
Vanadium	0.126	<0.001	1.26	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
VOC MS (W)							
Benzene	0.00131	<0.001	0.0131	<0.01	-	-	-
Toluene	0.00108	<0.001	0.0108	<0.01	-	-	-
Ethylbenzene	<0.001	<0.001	<0.01	<0.01	-	-	-
p/m-Xylene	<0.001	<0.001	<0.01	<0.01	-	-	-
o-Xylene	<0.001	<0.001	<0.01	<0.01	-	-	-
Total Xylenes	<0.002	<0.002	<0.02	<0.02	-	-	-

Leach Test Information

Date Prepared	07-Feb-2018
pH (pH Units)	9.97
Conductivity (µS/cm)	221.00
Temperature (°C)	19.80
Volume Leachant (Litres)	0.890

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180206-15	**Client Reference:**		**Report Number:**	445153
Location:	Llanwern	**Order Number:**	LLA396	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.099	**Natural Moisture Content (%)**	10.5
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	90.5
Particle Size <4mm	>95%		

Case	
SDG	180206-15
Lab Sample Number(s)	16996077
Sampled Date	05-Feb-2018
Customer Sample Ref.	W134-16
Depth (m)	0.00 - 0.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
pH Value of Filtered Water	9.7	<0.001	97	<0.01	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Naphthalene (diss.filt)	0.0000114	<0.00001	0.000114	<0.0001	-	-	-
Total Cyanide (W)	0.071	<0.05	0.71	<0.5	-	-	-
Acenaphthene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Arsenic	0.00686	<0.0005	0.0686	<0.005	-	-	-
Acenaphthylene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene (diss.filt)	0.0000377	<0.000005	0.000377	<0.00005	-	-	-
Anthracene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Iron	0.0579	<0.019	0.579	<0.19	-	-	-
Phenanthrene (diss.filt)	0.0000294	<0.000005	0.000294	<0.00005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Fluorene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene (diss.filt)	0.0000214	<0.000005	0.000214	<0.00005	-	-	-
Pyrene (diss.filt)	0.0000273	<0.000005	0.000273	<0.00005	-	-	-
Benzo(a)anthracene (diss.filt)	0.0000225	<0.000005	0.000225	<0.00005	-	-	-
Chromium	0.00138	<0.001	0.0138	<0.01	-	-	-
Benzo(b)fluoranthene (diss.filt)	0.0000166	<0.000005	0.000166	<0.00005	-	-	-
Benzo(k)fluoranthene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene (diss.filt)	0.00000847	<0.000002	0.0000847	<0.00002	-	-	-
Copper	0.00847	<0.0003	0.0847	<0.003	-	-	-
Dibenzo(a,h)anthracene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Benzo(g,h,i)perylene (diss.filt)	0.0000117	<0.000005	0.000117	<0.00005	-	-	-

Leach Test Information

Date Prepared	07-Feb-2018
pH (pH Units)	9.75
Conductivity (µS/cm)	255.00
Temperature (°C)	19.50
Volume Leachant (Litres)	0.891

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180206-15	**Client Reference:**		**Report Number:**	445153
Location:	Llanwern	**Order Number:**	LLA396	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.099	**Natural Moisture Content (%)**	10.5
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	90.5
Particle Size <4mm	>95%		

Case	
SDG	180206-15
Lab Sample Number(s)	16996077
Sampled Date	05-Feb-2018
Customer Sample Ref.	W134-16
Depth (m)	0.00 - 0.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Indeno(1,2,3-cd)pyrene (diss.filt)	0.00000556	<0.000005	0.0000556	<0.00005	-	-	-
Manganese	0.0051	<0.001	0.051	<0.01	-	-	-
PAH 16 EPA Total by GCMS (diss.filt)	0.000192	<0.000082	0.00192	<0.00082	-	-	-
Nickel	0.00355	<0.0004	0.0355	<0.004	-	-	-
Selenium	0.00314	<0.0005	0.0314	<0.005	-	-	-
Vanadium	0.143	<0.001	1.43	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
VOC MS (W)							
Benzene	<0.001	<0.001	<0.01	<0.01	-	-	-
Toluene	<0.001	<0.001	<0.01	<0.01	-	-	-
Ethylbenzene	<0.001	<0.001	<0.01	<0.01	-	-	-
p/m-Xylene	<0.001	<0.001	<0.01	<0.01	-	-	-
o-Xylene	<0.001	<0.001	<0.01	<0.01	-	-	-
Total Xylenes	<0.002	<0.002	<0.02	<0.02	-	-	-

Leach Test Information

Date Prepared	07-Feb-2018
pH (pH Units)	9.75
Conductivity (µS/cm)	255.00
Temperature (°C)	19.50
Volume Leachant (Litres)	0.891

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180206-15	**Client Reference:**		**Report Number:**	445153
Location:	Llanwern	**Order Number:**	LLA396	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.100	**Natural Moisture Content (%)**	11.1
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	90
Particle Size <4mm	>95%		

Case	
SDG	180206-15
Lab Sample Number(s)	16996083
Sampled Date	05-Feb-2018
Customer Sample Ref.	W134-17
Depth (m)	0.00 - 0.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	0.027	<0.01	0.27	<0.1	-	-	-
Aromatics >EC21-EC35	0.027	<0.01	0.27	<0.1	-	-	-
Aromatics >EC16-EC35	0.054	<0.01	0.54	<0.1	-	-	-
Total Aromatics >EC12-EC35	0.054	<0.01	0.54	<0.1	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	0.086	<0.01	0.86	<0.1	-	-	-
Ammoniacal Nitrogen as N	0.764	<0.2	7.64	<2	-	-	-
pH Value of Filtered Water	11	<0.001	110	<0.01	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Naphthalene (diss.filt)	0.000198	<0.00001	0.00198	<0.0001	-	-	-
Total Cyanide (W)	0.14	<0.05	1.4	<0.5	-	-	-
Acenaphthene (diss.filt)	0.000783	<0.000005	0.00783	<0.00005	-	-	-
Arsenic	0.00514	<0.0005	0.0514	<0.005	-	-	-
Acenaphthylene (diss.filt)	0.000883	<0.000005	0.00883	<0.00005	-	-	-
Fluoranthene (diss.filt)	0.00386	<0.000005	0.0386	<0.00005	-	-	-
Anthracene (diss.filt)	0.000764	<0.000005	0.00764	<0.00005	-	-	-
Iron	0.0559	<0.019	0.559	<0.19	-	-	-
Phenanthrene (diss.filt)	0.00284	<0.000005	0.0284	<0.00005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Fluorene (diss.filt)	0.0013	<0.000005	0.013	<0.00005	-	-	-
Chrysene (diss.filt)	0.000371	<0.000005	0.00371	<0.00005	-	-	-
Pyrene (diss.filt)	0.00252	<0.000005	0.0252	<0.00005	-	-	-
Benzo(a)anthracene (diss.filt)	0.000332	<0.000005	0.00332	<0.00005	-	-	-
Chromium	0.00373	<0.001	0.0373	<0.01	-	-	-
Benzo(b)fluoranthene (diss.filt)	0.000272	<0.000005	0.00272	<0.00005	-	-	-
Benzo(k)fluoranthene (diss.filt)	0.0000887	<0.000005	0.000887	<0.00005	-	-	-
Benzo(a)pyrene (diss.filt)	0.000137	<0.000002	0.00137	<0.00002	-	-	-
Copper	0.0116	<0.0003	0.116	<0.003	-	-	-
Dibenzo(a,h)anthracene (diss.filt)	0.0000189	<0.000005	0.000189	<0.00005	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Benzo(g,h,i)perylene (diss.filt)	0.000141	<0.000005	0.00141	<0.00005	-	-	-

Leach Test Information

Date Prepared	07-Feb-2018
pH (pH Units)	10.42
Conductivity (µS/cm)	367.00
Temperature (°C)	19.80
Volume Leachant (Litres)	0.890

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180206-15	**Client Reference:**		**Report Number:**	445153
Location:	Llanwern	**Order Number:**	LLA396	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.100	**Natural Moisture Content (%)**	11.1
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	90
Particle Size <4mm	>95%		

Case	
SDG	180206-15
Lab Sample Number(s)	16996083
Sampled Date	05-Feb-2018
Customer Sample Ref.	W134-17
Depth (m)	0.00 - 0.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Indeno(1,2,3-cd)pyrene (diss.filt)	0.0000895	<0.000005	0.000895	<0.00005	-	-	-
Manganese	0.00191	<0.001	0.0191	<0.01	-	-	-
PAH 16 EPA Total by GCMS (diss.filt)	0.0146	<0.000082	0.146	<0.00082	-	-	-
Nickel	0.00234	<0.0004	0.0234	<0.004	-	-	-
Selenium	0.00524	<0.0005	0.0524	<0.005	-	-	-
Vanadium	0.169	<0.001	1.69	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
VOC MS (W)							
Benzene	0.00146	<0.001	0.0146	<0.01	-	-	-
Toluene	0.00107	<0.001	0.0107	<0.01	-	-	-
Ethylbenzene	<0.001	<0.001	<0.01	<0.01	-	-	-
p/m-Xylene	<0.001	<0.001	<0.01	<0.01	-	-	-
o-Xylene	<0.001	<0.001	<0.01	<0.01	-	-	-
Total Xylenes	<0.002	<0.002	<0.02	<0.02	-	-	-

Leach Test Information

Date Prepared	07-Feb-2018
pH (pH Units)	10.42
Conductivity (µS/cm)	367.00
Temperature (°C)	19.80
Volume Leachant (Litres)	0.890

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180206-15	**Client Reference:**		**Report Number:**	445153
Location:	Llanwern	**Order Number:**	LLA396	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.096	**Natural Moisture Content (%)**	7.07
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	93.4
Particle Size <4mm	>95%		

Case	
SDG	180206-15
Lab Sample Number(s)	16996087
Sampled Date	05-Feb-2018
Customer Sample Ref.	W134-18
Depth (m)	0.00 - 0.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	0.023	<0.01	0.23	<0.1	-	-	-
Aromatics >EC21-EC35	0.028	<0.01	0.28	<0.1	-	-	-
Aromatics >EC16-EC35	0.051	<0.01	0.51	<0.1	-	-	-
Total Aromatics >EC12-EC35	0.051	<0.01	0.51	<0.1	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	0.075	<0.01	0.75	<0.1	-	-	-
Ammoniacal Nitrogen as N	0.335	<0.2	3.35	<2	-	-	-
pH Value of Filtered Water	10	<0.001	100	<0.01	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Naphthalene (diss.filt)	0.00185	<0.00001	0.0185	<0.0001	-	-	-
Total Cyanide (W)	0.119	<0.05	1.19	<0.5	-	-	-
Acenaphthene (diss.filt)	0.000494	<0.000005	0.00494	<0.00005	-	-	-
Arsenic	0.00736	<0.0005	0.0736	<0.005	-	-	-
Acenaphthylene (diss.filt)	0.00143	<0.000005	0.0143	<0.00005	-	-	-
Fluoranthene (diss.filt)	0.00322	<0.000005	0.0322	<0.00005	-	-	-
Anthracene (diss.filt)	0.000782	<0.000005	0.00782	<0.00005	-	-	-
Iron	0.0642	<0.019	0.642	<0.19	-	-	-
Phenanthrene (diss.filt)	0.00397	<0.000005	0.0397	<0.00005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Fluorene (diss.filt)	0.00126	<0.000005	0.0126	<0.00005	-	-	-
Chrysene (diss.filt)	0.000583	<0.000005	0.00583	<0.00005	-	-	-
Pyrene (diss.filt)	0.00213	<0.000005	0.0213	<0.00005	-	-	-
Benzo(a)anthracene (diss.filt)	0.000537	<0.000005	0.00537	<0.00005	-	-	-
Chromium	0.00116	<0.001	0.0116	<0.01	-	-	-
Benzo(b)fluoranthene (diss.filt)	0.000545	<0.000005	0.00545	<0.00005	-	-	-
Benzo(k)fluoranthene (diss.filt)	0.000246	<0.000005	0.00246	<0.00005	-	-	-
Benzo(a)pyrene (diss.filt)	0.00028	<0.000002	0.0028	<0.00002	-	-	-
Copper	0.0125	<0.0003	0.125	<0.003	-	-	-
Dibenzo(a,h)anthracene (diss.filt)	0.0000344	<0.000005	0.000344	<0.00005	-	-	-
Lead	0.00152	<0.0002	0.0152	<0.002	-	-	-
Benzo(g,h,i)perylene (diss.filt)	0.000229	<0.000005	0.00229	<0.00005	-	-	-

Leach Test Information

Date Prepared	07-Feb-2018
pH (pH Units)	10.01
Conductivity (µS/cm)	275.00
Temperature (°C)	19.90
Volume Leachant (Litres)	0.894

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180206-15	**Client Reference:**		**Report Number:**	445153
Location:	Llanwern	**Order Number:**	LLA396	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.096	**Natural Moisture Content (%)**	7.07
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	93.4
Particle Size <4mm	>95%		

Case	
SDG	180206-15
Lab Sample Number(s)	16996087
Sampled Date	05-Feb-2018
Customer Sample Ref.	W134-18
Depth (m)	0.00 - 0.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Indeno(1,2,3-cd)pyrene (diss.filt)	0.000167	<0.000005	0.00167	<0.00005	-	-	-
Manganese	0.00453	<0.001	0.0453	<0.01	-	-	-
PAH 16 EPA Total by GCMS (diss.filt)	0.0178	<0.000082	0.178	<0.00082	-	-	-
Nickel	0.00235	<0.0004	0.0235	<0.004	-	-	-
Selenium	0.00521	<0.0005	0.0521	<0.005	-	-	-
Vanadium	0.147	<0.001	1.47	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
VOC MS (W)							
Benzene	0.0012	<0.001	0.012	<0.01	-	-	-
Toluene	0.0011	<0.001	0.011	<0.01	-	-	-
Ethylbenzene	<0.001	<0.001	<0.01	<0.01	-	-	-
p/m-Xylene	<0.001	<0.001	<0.01	<0.01	-	-	-
o-Xylene	<0.001	<0.001	<0.01	<0.01	-	-	-
Total Xylenes	<0.002	<0.002	<0.02	<0.02	-	-	-

Leach Test Information

Date Prepared	07-Feb-2018
pH (pH Units)	10.01
Conductivity (µS/cm)	275.00
Temperature (°C)	19.90
Volume Leachant (Litres)	0.894

Mcerts Certification does not apply to leachates

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Table of Results - Appendix

Method No	Reference	Description
ASB_PREP		
PM001		Preparation of Samples for Metals Analysis
PM024	Modified BS 1377	Soil preparation including homogenisation, moisture screens of soils for Asbestos Containing Material
PM115		Leaching Procedure for CEN One Stage Leach Test 2:1 & 10:1 1 Step
TM024	Method 4500A & B, AWWA/APHA, 20th Ed., 1999	Determination of Exchangeable Ammonium and Ammoniacal Nitrogen as N by titration on solids
TM048	HSG 248, Asbestos: The analysts' guide for sampling, analysis and clearance procedures	Identification of Asbestos in Bulk Material
TM061	Method for the Determination of EPH,Massachusetts Dept.of EP, 1998	Determination of Extractable Petroleum Hydrocarbons by GC-FID (C10-C40)
TM062 (S)	National Grid Property Holdings Methods for the Collection & Analysis of Samples from National Grid Sites version 1 Sec 3.9	Determination of Phenols in Soils by HPLC
TM089	Modified: US EPA Methods 8020 & 602	Determination of Gasoline Range Hydrocarbons (GRO) and BTEX (MTBE) compounds by Headspace GC-FID (C4-C12)
TM099	BS 2690: Part 7:1968 / BS 6068: Part2.11:1984	Determination of Ammonium in Water Samples using the Kone Analyser
TM132	In - house Method	ELTRA CS800 Operators Guide
TM133	BS 1377: Part 3 1990;BS 6068-2.5	Determination of pH in Soil and Water using the GLpH pH Meter
TM152	Method 3125B, AWWA/APHA, 20th Ed., 1999	Analysis of Aqueous Samples by ICP-MS
TM153	Method 4500A,B,C, I, M AWWA/APHA, 20th Ed., 1999	Determination of Total Cyanide, Free (Easily Liberatable) Cyanide and Thiocyanate using the Skalar SANS+ System Segmented Flow Analyser
TM173	Analysis of Petroleum Hydrocarbons in Environmental Media – Total Petroleum Hydrocarbon Criteria	Determination of Speciated Extractable Petroleum Hydrocarbons in Soils by GC-FID
TM174	Analysis of Petroleum Hydrocarbons in Environmental Media – Total Petroleum Hydrocarbon Criteria	Determination of Speciated Extractable Petroleum Hydrocarbons in Waters by GC-FID
TM178	Modified: US EPA Method 8100	Determination of Polynuclear Aromatic Hydrocarbons (PAH) by GC-MS in Waters
TM181	US EPA Method 6010B	Determination of Routine Metals in Soil by iCap 6500 Duo ICP-OES
TM183	BS EN 23506:2002, (BS 6068-2.74:2002) ISBN 0 580 38924 3	Determination of Trace Level Mercury in Waters and Leachates by PSA Cold Vapour Atomic Fluorescence Spectrometry
TM208	Modified: US EPA Method 8260b & 624	Determination of Volatile Organic Compounds by Headspace / GC-MS in Waters
TM218	Determination of PAH by GCMS Microwave extraction	The determination of PAH in soil samples by microwave extraction and GC-MS
TM221	Inductively Coupled Plasma - Atomic Emission Spectroscopy. An Atlas of Spectral Information: Winge, Fassel, Peterson and Floyd	Determination of Acid extractable Sulphate in Soils by IRIS Emission Spectrometer
TM224	US EPA Method 6010B	Determination of Alkaline Metals by iCap 6500 Duo ICP-OES
TM227	Standard methods for the examination of waters and wastewaters 20th Edition, AWWA/APHA Method 4500.	Determination of Total Cyanide, Free (Easily Liberatable) Cyanide and Thiocyanate
TM228	US EPA Method 6010B	Determination of Major Cations in Water by iCap 6500 Duo ICP-OES
TM243		Mixed Anions In Soils By Kone
TM245	By GC-FID	Determination of GRO by Headspace in waters
TM256	The measurement of Electrical Conductivity and the Laboratory determination of pH Value of Natural, Treated and Wastewaters. HMSO, 1978. ISBN 011 751428 4.	Determination of pH in Water and Leachate using the GLpH pH Meter
TM304	HSE Contract research Report no 83/1996	Asbestos Quantification in Soil: Fibres identified by morphology only

NA = not applicable.

Chemical testing (unless subcontracted) performed at ALS Environmental Hawarden (Method codes TM) or ALS Environmental Aberdeen (Method codes S).

CERTIFICATE OF ANALYSIS

SDG:	180206-15	**Client Reference:**		**Report Number:**	445153
Location:	Llanwern	**Order Number:**	LLA396	**Superseded Report:**	

Test Completion Dates

Lab Sample No(s)	16995970	16996026	16996040	16996045	16996058	16996072	16996077	16996083	16996087	16995977
Customer Sample Ref.	W134-10	W134-11	W134-12	W134-13	W134-14	W134-15	W134-16	W134-17	W134-18	W134-19
AGS Ref.										
Depth	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
Alkali Metals by iCap-OES (Soil)	16-Feb-2018		16-Feb-2018		16-Feb-2018		16-Feb-2018		16-Feb-2018	
Ammoniacal Nitrogen	14-Feb-2018	14-Feb-2018	14-Feb-2018	13-Feb-2018	14-Feb-2018	14-Feb-2018	14-Feb-2018	14-Feb-2018	14-Feb-2018	14-Feb-2018
Ammonium Soil by Titration	15-Feb-2018	15-Feb-2018	15-Feb-2018	15-Feb-2018	15-Feb-2018	15-Feb-2018	13-Feb-2018	15-Feb-2018	15-Feb-2018	15-Feb-2018
Anions by Kone (soil)	10-Feb-2018		15-Feb-2018		15-Feb-2018		10-Feb-2018		10-Feb-2018	
Asbestos ID in Solid Samples	15-Feb-2018		15-Feb-2018		15-Feb-2018		15-Feb-2018		15-Feb-2018	
Asbestos Quantification - Full							19-Feb-2018			
CEN 10:1 Leachate (1 Stage)	15-Feb-2018	15-Feb-2018	14-Feb-2018	07-Feb-2018	14-Feb-2018	15-Feb-2018	15-Feb-2018	14-Feb-2018	15-Feb-2018	14-Feb-2018
CEN Readings	16-Feb-2018	16-Feb-2018	16-Feb-2018	10-Feb-2018	16-Feb-2018	16-Feb-2018	16-Feb-2018	16-Feb-2018	16-Feb-2018	16-Feb-2018
Cyanide Comp/Free/Total/Thiocyanate	15-Feb-2018	15-Feb-2018	15-Feb-2018	12-Feb-2018	15-Feb-2018	15-Feb-2018	15-Feb-2018	15-Feb-2018	15-Feb-2018	15-Feb-2018
Dissolved Metals by ICP-MS	14-Feb-2018	14-Feb-2018	14-Feb-2018	15-Feb-2018	14-Feb-2018	14-Feb-2018	14-Feb-2018	14-Feb-2018	14-Feb-2018	14-Feb-2018
EPH CWG (Aliphatic) Filtered GC (W)	15-Feb-2018	15-Feb-2018	15-Feb-2018	14-Feb-2018	15-Feb-2018	15-Feb-2018	15-Feb-2018	15-Feb-2018	15-Feb-2018	15-Feb-2018
EPH CWG (Aliphatic) GC (S)	09-Feb-2018	08-Feb-2018	08-Feb-2018	08-Feb-2018	08-Feb-2018	08-Feb-2018	08-Feb-2018	09-Feb-2018	09-Feb-2018	07-Feb-2018
EPH CWG (Aromatic) Filtered GC (W)	15-Feb-2018	15-Feb-2018	15-Feb-2018	14-Feb-2018	15-Feb-2018	15-Feb-2018	15-Feb-2018	15-Feb-2018	15-Feb-2018	15-Feb-2018
EPH CWG (Aromatic) GC (S)	07-Feb-2018	08-Feb-2018	08-Feb-2018	08-Feb-2018	08-Feb-2018	08-Feb-2018	08-Feb-2018	09-Feb-2018	09-Feb-2018	07-Feb-2018
GRO by GC-FID (S)	14-Feb-2018	13-Feb-2018	13-Feb-2018	13-Feb-2018	13-Feb-2018	13-Feb-2018	13-Feb-2018	13-Feb-2018	13-Feb-2018	13-Feb-2018
GRO by GC-FID (W)	14-Feb-2018	15-Feb-2018	14-Feb-2018	15-Feb-2018	14-Feb-2018	14-Feb-2018	15-Feb-2018	14-Feb-2018	15-Feb-2018	15-Feb-2018
Mercury Dissolved	14-Feb-2018	14-Feb-2018	14-Feb-2018	13-Feb-2018	14-Feb-2018	14-Feb-2018	14-Feb-2018	14-Feb-2018	14-Feb-2018	14-Feb-2018
Metals by iCap-OES Dissolved (W)	14-Feb-2018	14-Feb-2018	15-Feb-2018	14-Feb-2018	15-Feb-2018	14-Feb-2018	15-Feb-2018	14-Feb-2018	15-Feb-2018	14-Feb-2018
Metals in solid samples by OES	19-Feb-2018	19-Feb-2018	19-Feb-2018	19-Feb-2018	19-Feb-2018	19-Feb-2018	19-Feb-2018	16-Feb-2018	19-Feb-2018	15-Feb-2018
PAH by GCMS	14-Feb-2018	14-Feb-2018	14-Feb-2018	14-Feb-2018	14-Feb-2018	14-Feb-2018	13-Feb-2018	14-Feb-2018	13-Feb-2018	13-Feb-2018
PAH in waters by GC-MS (diss.filt)	19-Feb-2018	19-Feb-2018	19-Feb-2018	13-Feb-2018	19-Feb-2018	19-Feb-2018	19-Feb-2018	19-Feb-2018	19-Feb-2018	19-Feb-2018
pH	13-Feb-2018	07-Feb-2018	07-Feb-2018	07-Feb-2018	07-Feb-2018	07-Feb-2018	13-Feb-2018	13-Feb-2018	13-Feb-2018	08-Feb-2018
pH Value of Filtered Water	15-Feb-2018	15-Feb-2018	15-Feb-2018	12-Feb-2018	15-Feb-2018	15-Feb-2018	15-Feb-2018	15-Feb-2018	15-Feb-2018	15-Feb-2018
Phenols by HPLC (S)	08-Feb-2018	08-Feb-2018	08-Feb-2018	08-Feb-2018	08-Feb-2018	08-Feb-2018	08-Feb-2018	08-Feb-2018	09-Feb-2018	08-Feb-2018
Sample description	06-Feb-2018	06-Feb-2018	06-Feb-2018	06-Feb-2018	06-Feb-2018	06-Feb-2018	06-Feb-2018	06-Feb-2018	06-Feb-2018	06-Feb-2018
Total Organic Carbon	12-Feb-2018	12-Feb-2018	12-Feb-2018	12-Feb-2018	12-Feb-2018	12-Feb-2018	12-Feb-2018	12-Feb-2018	12-Feb-2018	12-Feb-2018
Total Sulphate	14-Feb-2018		15-Feb-2018		15-Feb-2018		15-Feb-2018		14-Feb-2018	
Total Sulphur	08-Feb-2018		09-Feb-2018		09-Feb-2018		08-Feb-2018		08-Feb-2018	
TPH CWG Filtered (W)	15-Feb-2018	15-Feb-2018	15-Feb-2018	15-Feb-2018	15-Feb-2018	15-Feb-2018	15-Feb-2018	15-Feb-2018	15-Feb-2018	15-Feb-2018
TPH CWG GC (S)	14-Feb-2018	13-Feb-2018	13-Feb-2018	13-Feb-2018	13-Feb-2018	13-Feb-2018	13-Feb-2018	13-Feb-2018	13-Feb-2018	13-Feb-2018
VOC MS (W)	14-Feb-2018	15-Feb-2018	14-Feb-2018	14-Feb-2018	14-Feb-2018	14-Feb-2018	14-Feb-2018	15-Feb-2018	14-Feb-2018	14-Feb-2018

Lab Sample No(s)	16995981	16995985	16995989	16995993	16996000	16996005	16996009	16996015	16996019	16996031
Customer Sample Ref.	W134-20	W134-21	W134-22	W134-23	W134-24	W134-25	W134-26	W134-27	W134-28	W134-29
AGS Ref.										
Depth	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
Alkali Metals by iCap-OES (Soil)	16-Feb-2018		16-Feb-2018		16-Feb-2018		16-Feb-2018		16-Feb-2018	
Ammoniacal Nitrogen	13-Feb-2018	12-Feb-2018	13-Feb-2018	13-Feb-2018	14-Feb-2018	14-Feb-2018	14-Feb-2018	14-Feb-2018	13-Feb-2018	14-Feb-2018
Ammonium Soil by Titration	15-Feb-2018	13-Feb-2018	15-Feb-2018	15-Feb-2018	15-Feb-2018	15-Feb-2018	15-Feb-2018	15-Feb-2018	15-Feb-2018	15-Feb-2018
Anions by Kone (soil)	10-Feb-2018		10-Feb-2018		10-Feb-2018		10-Feb-2018		10-Feb-2018	
Asbestos ID in Solid Samples	15-Feb-2018		15-Feb-2018		15-Feb-2018		15-Feb-2018		15-Feb-2018	
CEN 10:1 Leachate (1 Stage)	07-Feb-2018	07-Feb-2018	07-Feb-2018	07-Feb-2018	14-Feb-2018	15-Feb-2018	14-Feb-2018	14-Feb-2018	07-Feb-2018	14-Feb-2018
CEN Readings	10-Feb-2018	10-Feb-2018	10-Feb-2018	10-Feb-2018	16-Feb-2018	16-Feb-2018	16-Feb-2018	16-Feb-2018	10-Feb-2018	19-Feb-2018
Cyanide Comp/Free/Total/Thiocyanate	12-Feb-2018	12-Feb-2018	12-Feb-2018	12-Feb-2018	15-Feb-2018	15-Feb-2018	15-Feb-2018	15-Feb-2018	12-Feb-2018	15-Feb-2018
Dissolved Metals by ICP-MS	15-Feb-2018	15-Feb-2018	15-Feb-2018	15-Feb-2018	14-Feb-2018	14-Feb-2018	14-Feb-2018	14-Feb-2018	15-Feb-2018	14-Feb-2018
EPH CWG (Aliphatic) Filtered GC (W)	14-Feb-2018	14-Feb-2018	14-Feb-2018	14-Feb-2018	15-Feb-2018	15-Feb-2018	15-Feb-2018	15-Feb-2018	14-Feb-2018	15-Feb-2018
EPH CWG (Aliphatic) GC (S)	08-Feb-2018	12-Feb-2018	07-Feb-2018	07-Feb-2018	07-Feb-2018	14-Feb-2018	09-Feb-2018	09-Feb-2018	12-Feb-2018	07-Feb-2018
EPH CWG (Aromatic) Filtered GC (W)	14-Feb-2018	14-Feb-2018	14-Feb-2018	14-Feb-2018	15-Feb-2018	15-Feb-2018	15-Feb-2018	15-Feb-2018	14-Feb-2018	15-Feb-2018
EPH CWG (Aromatic) GC (S)	08-Feb-2018	12-Feb-2018	07-Feb-2018	07-Feb-2018	07-Feb-2018	14-Feb-2018	09-Feb-2018	09-Feb-2018	12-Feb-2018	07-Feb-2018
GRO by GC-FID (S)	13-Feb-2018	13-Feb-2018	13-Feb-2018	13-Feb-2018	13-Feb-2018	13-Feb-2018	13-Feb-2018	13-Feb-2018	13-Feb-2018	13-Feb-2018
GRO by GC-FID (W)	15-Feb-2018	15-Feb-2018	15-Feb-2018	15-Feb-2018	15-Feb-2018	15-Feb-2018	15-Feb-2018	15-Feb-2018	15-Feb-2018	14-Feb-2018
Mercury Dissolved	13-Feb-2018	13-Feb-2018	13-Feb-2018	13-Feb-2018	14-Feb-2018	14-Feb-2018	14-Feb-2018	14-Feb-2018	13-Feb-2018	14-Feb-2018
Metals by iCap-OES Dissolved (W)	15-Feb-2018	15-Feb-2018	15-Feb-2018	15-Feb-2018	14-Feb-2018	15-Feb-2018	15-Feb-2018	15-Feb-2018	15-Feb-2018	15-Feb-2018
Metals in solid samples by OES	16-Feb-2018	19-Feb-2018	16-Feb-2018	19-Feb-2018	16-Feb-2018	15-Feb-2018	16-Feb-2018	16-Feb-2018	19-Feb-2018	19-Feb-2018
PAH by GCMS	13-Feb-2018	14-Feb-2018	14-Feb-2018	13-Feb-2018	14-Feb-2018	14-Feb-2018	14-Feb-2018	14-Feb-2018	14-Feb-2018	14-Feb-2018
PAH in waters by GC-MS (diss.filt)	13-Feb-2018	13-Feb-2018	13-Feb-2018	13-Feb-2018	19-Feb-2018	19-Feb-2018	19-Feb-2018	19-Feb-2018	13-Feb-2018	19-Feb-2018
pH	07-Feb-2018	12-Feb-2018	13-Feb-2018	08-Feb-2018	13-Feb-2018	13-Feb-2018	13-Feb-2018	13-Feb-2018	13-Feb-2018	12-Feb-2018
pH Value of Filtered Water	12-Feb-2018	12-Feb-2018	12-Feb-2018	12-Feb-2018	15-Feb-2018	15-Feb-2018	15-Feb-2018	15-Feb-2018	12-Feb-2018	15-Feb-2018
Phenols by HPLC (S)	08-Feb-2018	08-Feb-2018	08-Feb-2018	08-Feb-2018	08-Feb-2018	08-Feb-2018	08-Feb-2018	08-Feb-2018	08-Feb-2018	08-Feb-2018
Sample description	06-Feb-2018	06-Feb-2018	06-Feb-2018	06-Feb-2018	06-Feb-2018	06-Feb-2018	06-Feb-2018	06-Feb-2018	06-Feb-2018	06-Feb-2018
Total Organic Carbon	12-Feb-2018	12-Feb-2018	12-Feb-2018	12-Feb-2018	12-Feb-2018	12-Feb-2018	12-Feb-2018	12-Feb-2018	12-Feb-2018	12-Feb-2018
Total Sulphate	14-Feb-2018		14-Feb-2018		14-Feb-2018		14-Feb-2018		14-Feb-2018	
Total Sulphur	08-Feb-2018		08-Feb-2018		08-Feb-2018		08-Feb-2018		08-Feb-2018	
TPH CWG Filtered (W)	15-Feb-2018	15-Feb-2018	15-Feb-2018	15-Feb-2018	15-Feb-2018	15-Feb-2018	15-Feb-2018	15-Feb-2018	15-Feb-2018	15-Feb-2018
TPH CWG GC (S)	13-Feb-2018	13-Feb-2018	13-Feb-2018	13-Feb-2018	13-Feb-2018	14-Feb-2018	13-Feb-2018	13-Feb-2018	13-Feb-2018	13-Feb-2018
VOC MS (W)	15-Feb-2018	15-Feb-2018	15-Feb-2018	15-Feb-2018	14-Feb-2018	14-Feb-2018	15-Feb-2018	15-Feb-2018	15-Feb-2018	15-Feb-2018

Validated

CERTIFICATE OF ANALYSIS

SDG:	180206-15	**Client Reference:**		**Report Number:**	445153
Location:	Llanwern	**Order Number:**	LLA396	**Superseded Report:**	

Lab Sample No(s)	16996036
Customer Sample Ref.	W134-30
AGS Ref.	
Depth	0.00 - 0.00
Type	Soil/Solid (S)

Alkali Metals by iCap-OES (Soil)	16-Feb-2018
Ammoniacal Nitrogen	14-Feb-2018
Ammonium Soil by Titration	15-Feb-2018
Anions by Kone (soil)	15-Feb-2018
Asbestos ID in Solid Samples	15-Feb-2018
Asbestos Quantification - Full	15-Feb-2018
CEN 10:1 Leachate (1 Stage)	15-Feb-2018
CEN Readings	19-Feb-2018
Cyanide Comp/Free/Total/Thiocyanate	15-Feb-2018
Dissolved Metals by ICP-MS	14-Feb-2018
EPH CWG (Aliphatic) Filtered GC (W)	15-Feb-2018
EPH CWG (Aliphatic) GC (S)	08-Feb-2018
EPH CWG (Aromatic) Filtered GC (W)	15-Feb-2018
EPH CWG (Aromatic) GC (S)	08-Feb-2018
GRO by GC-FID (S)	14-Feb-2018
GRO by GC-FID (W)	14-Feb-2018
Mercury Dissolved	14-Feb-2018
Metals by iCap-OES Dissolved (W)	15-Feb-2018
Metals in solid samples by OES	19-Feb-2018
PAH by GCMS	14-Feb-2018
PAH in waters by GC-MS (diss.filt)	19-Feb-2018
pH	07-Feb-2018
pH Value of Filtered Water	15-Feb-2018
Phenols by HPLC (S)	08-Feb-2018
Sample description	06-Feb-2018
Total Organic Carbon	12-Feb-2018
Total Sulphate	15-Feb-2018
Total Sulphur	09-Feb-2018
TPH CWG Filtered (W)	15-Feb-2018
TPH CWG GC (S)	14-Feb-2018
VOC MS (W)	14-Feb-2018

Appendix General

1. Results are expressed on a dry weight basis (dried at 35ºC) for all soil analyses except for the following: NRA and CEN Leach tests, flash point LOI, pH, ammonium as NH4 by the BRE method, VOC TICs and SVOC TICs.

2. Samples will be run in duplicate upon request, but an additional charge may be incurred.

3. If sufficient sample is received a sub sample will be retained free of charge for 30 days after analysis is completed (e-mailed) for all sample types unless the sample is destroyed on testing. The prepared soil sub sample that is analysed for asbestos will be retained for a period of 6 months after the analysis date. All bulk samples will be retained for a period of 6 months after the analysis date. All samples received and not scheduled will be disposed of one month after the date of receipt unless we are instructed to the contrary. Once the initial period has expired, a storage charge will be applied for each month or part thereof until the client cancels the request for sample storage. ALS reserve the right to charge for samples received and stored but not analysed.

4. With respect to turnaround, we will always endeavour to meet client requirements wherever possible, but turnaround times cannot be absolutely guaranteed due to so many variables beyond our control.

5. We take responsibility for any test performed by sub-contractors (marked with an asterisk). We endeavour to use UKAS/MCERTS Accredited Laboratories, who either complete a quality questionnaire or are audited by ourselves. For some determinands there are no UKAS/MCERTS Accredited Laboratories, in this instance a laboratory with a known track record will be utilised.

6. When requested, the individual sub sample scheduled will be analysed in house for the presence of asbestos fibres and asbestos containing material by our documented in house method TM048 based on HSG 248 (2005), which is accredited to ISO17025. If a specific asbestos fibre type is not found this will be reported as “Not detected”. If no asbestos fibre types are found all will be reported as “Not detected” and the sub sample analysed deemed to be clear of asbestos. If an asbestos fibre type is found it will be reported as detected (for each fibre type found). Testing can be carried out on asbestos positive samples, but, due to Health and Safety considerations, may be replaced by alternative tests or reported as No Determination Possible (NDP). The quantity of asbestos present is not determined unless specifically requested.

7. If no separate volatile sample is supplied by the client, or if a headspace or sediment is present in the volatile sample, the integrity of the data may be compromised. This will be flagged up as an invalid VOC on the test schedule and the result marked as deviating on the test certificate.

8. If appropriate preserved bottles are not received preservation will take place on receipt. However, the integrity of the data may be compromised.

9. NDP - No determination possible due to insufficient/unsuitable sample.

10. Metals in water are performed on a filtered sample, and therefore represent dissolved metals - total metals must be requested separately.

11. Results relate only to the items tested.

12. LoDs (Limit of Detection) for wet tests reported on a dry weight basis are not corrected for moisture content.

13. **Surrogate recoveries** - Surrogates are added to your sample to monitor recovery of the test requested. A % recovery is reported, results are not corrected for the recovery measured. Typical recoveries for organics tests are 70-130%, they are generally wider for volatiles analysis, 50-150%. Recoveries in soils are affected by organic rich or clay rich matrices. Waters can be affected by remediation fluids or high amounts of sediment. Test results are only ever reported if all of the associated quality checks pass; it is assumed that all recoveries outside of the values above are due to matrix affect.

14. **Product analyses** - Organic analyses on products can only be semi-quantitative due to the matrix effects and high dilution factors employed.

15. Phenols monohydric by HPLC include phenol, cresols (2-Methylphenol, 3-Methylphenol and 4-Methylphenol) and Xylenols (2,3 Dimethylphenol, 2,4 Dimethylphenol, 2,5 Dimethylphenol, 2,6 Dimethylphenol, 3,4 Dimethyphenol, 3,5 Dimethylphenol).

16. Total of 5 speciated phenols by HPLC includes Phenol, 2,3,5-Trimethyl Phenol, 2-Isopropylphenol, Cresols and Xylenols (as detailed in 15).

17. Stones/debris are not routinely removed. We always endeavour to take a representative sub sample from the received sample.

18. In certain circumstances the method detection limit may be elevated due to the sample being outside the calibration range. Other factors that may contribute to this include possible interferences. In both cases the sample would be diluted which would cause the method detection limit to be raised.

19. Mercury results quoted on soils will not include volatile mercury as the analysis is performed on a dried and crushed sample.

20. For leachate preparations other than Zero Headspace Extraction (ZHE) volatile loss may occur.

21. For the BSEN 12457-3 two batch process to allow the cumulative release to be calculated, the volume of the leachate produced is measured and filtered for all tests. We therefore cannot carry out any unfiltered analysis. The tests affected include volatiles GCFID/GCMS and all subcontracted analysis.

22. We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample. Other coarse granular material such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

23. Analysis and identification of specific compounds using GCFID is by retention time only, and we routinely calibrate and quantify for benzene, toluene, ethylbenzenes and xylenes (BTEX). For total volatiles in the C5-C12 range, the total area of the chromatogram is integrated and expressed as ug/kg or ug/l. Although this analysis is commonly used for the quantification of gasoline range organics (GRO), the system will also detect other compounds such as chlorinated solvents, and this may lead to a falsely high result with respect to hydrocarbons only. It is not possible to specifically identify these non-hydrocarbons, as standards are not routinely run for any other compounds, and for more definitive identification, volatiles by GCMS should be utilised.

24. **Tentatively Identified Compounds (TICs)** are non-target peaks in VOC and SVOC analysis. All non-target peaks detected with a concentration above the LoD are subjected to a mass spectral library search. Non-target peaks with a library search confidence of >75% are reported based on the best mass spectral library match. When a non-target peak with a library search confidence of <75% is detected it is reported as “mixed hydrocarbons”. Non-target compounds identified from the scan data are semi-quantified relative to one of the deuterated internal standards, under the same chromatographic conditions as the target compounds. This result is reported as a semi-quantitative value and reported as Tentatively Identified Compounds (TICs). TICs are outside the scope of UKAS accreditation and are not moisture corrected.

Sample Deviations

If a sample is classed as deviated then the associated results may be compromised.

1	**Container with Headspace provided for volatiles analysis**
2	**Incorrect container received**
3	**Deviation from method**
4	**Holding time exceeded before sample received**
5	**Samples exceeded holding time before presevation was performed**
§	**Sampled on date not provided**
♦	**Sample holding time exceeded in laboratory**
@	**Sample holding time exceeded due to sampled on date**
&	**Sample Holding Time exceeded - Late arrival of instructions.**

Asbestos

Identification of Asbestos in Bulk Materials & Soils

The results for identification of asbestos in bulk materials are obtained from supplied bulk materials which have been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

The results for identification of asbestos in soils are obtained from a homogenised sub sample which has been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

Asbestos Type	Common Name
Chrysotile	White Asbestos
Amosite	Brown Asbestos
Crocidolite	Blue Asbestos
Fibrous Actinolite	-
Fibrous Anthophyllite	-
Fibrous Tremolite	-

Visual Estimation Of Fibre Content

Estimation of fibre content is not permitted as part of our UKAS accredited test other than: - Trace - Where only one or two asbestos fibres were identified.

Further guidance on typical asbestos fibre content of manufactured products can be found in HSG 264.

The identification of asbestos containing materials and soils falls within our schedule of tests for which we hold UKAS accreditation, however opinions, interpretations and all other information contained in the report are outside the scope of UKAS accreditation.

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Atkins Global Ltd
Project Jonah site office
Llan Coed House
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Coed Darcy
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SA10 6HJ

Attention: John Fitzgerald

CERTIFICATE OF ANALYSIS

Date:	27 March 2018
Customer:	H_ATKINS_LDC
Sample Delivery Group (SDG):	180315-103
Your Reference:	
Location:	Llanwern
Report No:	449692

This report has been revised and directly supersedes 449665 in its entirety.

We received 8 samples on Thursday March 15, 2018 and 8 of these samples were scheduled for analysis which was completed on Tuesday March 27, 2018. Accredited laboratory tests are defined within the report, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation.

Should this report require incorporation into client reports, it must be used in its entirety and not simply with the data sections alone.

Chemical testing (unless subcontracted) performed at ALS Environmental Hawarden (Method codes TM) or ALS Environmental Aberdeen (Method codes S).

Approved By:

Sonia McWhan
Operations Manager

ALS Life Sciences Limited. Registered Office: Units 7 & 8 Hawarden Business Park, Manor Road, Hawarden, Deeside, CH5 3US. Registered in England and Wales No. 4057291.

CERTIFICATE OF ANALYSIS

SDG:	180315-103	**Client Reference:**		**Report Number:**	449692
Location:	Llanwern	**Order Number:**	LLA413	**Superseded Report:**	449665

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
17215461	W134-31		0.00 - 0.00	14/03/2018
17215466	W134-32		0.00 - 0.00	14/03/2018
17215470	W134-33		0.00 - 0.00	14/03/2018
17215474	W134-34		0.00 - 0.00	14/03/2018
17215478	W134-35		0.00 - 0.00	14/03/2018
17215485	W134-36		0.00 - 0.00	14/03/2018
17215489	W134-37		0.00 - 0.00	14/03/2018
17215493	W134-38		0.00 - 0.00	14/03/2018

Maximum Sample/Coolbox Temperature (°C) : **9.8**

ISO5667-3 Water quality - Sampling - Part3 -
During Transportation samples shall be stored in a cooling device capable of maintaining a temperature of (5±3)°C.

ALS have data which show that a cool box with 4 frozen icepacks is capable of maintaining pre-chilled samples at a temperature of (5±3)°C for a period of up to 24hrs.

Only received samples which have had analysis scheduled will be shown on the following pages.

Validated

CERTIFICATE OF ANALYSIS

SDG: 180315-103 **Client Reference:** **Report Number:** 449692
Location: Llanwern **Order Number:** LLA413 **Superseded Report:** 449665

Results Legend

X Test

N No Determination Possible

Sample Types -
S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

			Lab Sample No(s)																			
			17215461			17215466			17215470			17215474			17215478			17215485			17215489	
			Customer Sample Reference																			
			W134-31			W134-32			W134-33			W134-34			W134-35			W134-36			W134-37	
			AGS Reference																			
			Depth (m)																			
			0.00 - 0.00			0.00 - 0.00			0.00 - 0.00			0.00 - 0.00			0.00 - 0.00			0.00 - 0.00			0.00 - 0.00	
			Container																			
			1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	
			Sample Type																			
			S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
Alkali Metals by iCap-OES (Soil)	All	NDPs: 0 Tests: 4		X						X						X						
Ammoniacal Nitrogen	All	NDPs: 0 Tests: 8	X			X			X			X			X			X			X	
Ammonium Soil by Titration	All	NDPs: 0 Tests: 8		X			X			X			X			X			X			
Anions by Kone (soil)	All	NDPs: 0 Tests: 4		X						X						X						
Asbestos ID in Solid Samples	All	NDPs: 0 Tests: 4	X						X						X						X	
Asbestos Quantification - Full	All	NDPs: 0 Tests: 3	X						X												X	
CEN Readings	All	NDPs: 0 Tests: 8	X			X			X			X			X			X			X	
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 16	X	X		X	X		X	X		X	X		X	X		X	X		X	
Dissolved Metals by ICP-MS	All	NDPs: 0 Tests: 8	X			X			X			X			X			X			X	
EPH CWG (Aliphatic) Aqueous GC (W)	All	NDPs: 0 Tests: 8	X			X			X			X			X			X			X	
EPH CWG (Aliphatic) GC (S)	All	NDPs: 0 Tests: 8		X			X			X			X			X			X			
EPH CWG (Aromatic) Aqueous GC (W)	All	NDPs: 0 Tests: 8	X			X			X			X			X			X			X	
EPH CWG (Aromatic) GC (S)	All	NDPs: 0 Tests: 8		X			X			X			X			X			X			
GRO by GC-FID (S)	All	NDPs: 0 Tests: 8			X			X			X			X			X			X		
GRO by GC-FID (W)	All	NDPs: 0 Tests: 8	X			X			X			X			X			X			X	

17215493	W134-38		0.00 - 0.00	60g VOC (ALE215)	S																											X			
				250g Amber Jar (ALE210)	S						X										X						X				X				
				1kg TUB	S				X										X		X		X		X				X						X
17215489	W134-37		0.00 - 0.00	60g VOC (ALE215)	S																											X			
				250g Amber Jar (ALE210)	S		X				X		X								X						X				X				

Validated

CERTIFICATE OF ANALYSIS

SDG: 180315-103 **Client Reference:** **Report Number:** 449692
Location: Llanwern **Order Number:** LLA413 **Superseded Report:** 449665

Results Legend

X Test

N No Determination Possible

Sample Types -
S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

			Lab Sample No(s)																			
			17215461			17215466			17215470			17215474			17215478			17215485			17215489	
			Customer Sample Reference																			
			W134-31			W134-32			W134-33			W134-34			W134-35			W134-36			W134-37	
			AGS Reference																			
			Depth (m)																			
			0.00 - 0.00			0.00 - 0.00			0.00 - 0.00			0.00 - 0.00			0.00 - 0.00			0.00 - 0.00			0.00 - 0.00	
			Container																			
			1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	
			Sample Type																			
			S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
Mercury Dissolved	All	NDPs: 0 Tests: 8	X			X			X			X			X			X			X	
Metals by iCap-OES Dissolved (W)	All	NDPs: 0 Tests: 8	X			X			X			X			X			X			X	
Metals in solid samples by OES	All	NDPs: 0 Tests: 8		X			X			X			X			X			X			
PAH by GCMS	All	NDPs: 0 Tests: 8		X			X			X			X			X			X			
PAH in waters by GC-MS (diss.filt)	All	NDPs: 0 Tests: 8	X			X			X			X			X			X			X	
pH	All	NDPs: 0 Tests: 8		X			X			X			X			X			X			
pH Value of Filtered Water	All	NDPs: 0 Tests: 8	X			X			X			X			X			X			X	
Phenols by HPLC (S)	All	NDPs: 0 Tests: 8		X			X			X			X			X			X			
Sample description	All	NDPs: 0 Tests: 8		X			X			X			X			X			X			
Total Organic Carbon	All	NDPs: 0 Tests: 8		X			X			X			X			X			X			
Total Sulphate	All	NDPs: 0 Tests: 4		X						X						X						
Total Sulphur	All	NDPs: 0 Tests: 4		X						X						X						
TPH CWG (W)	All	NDPs: 0 Tests: 8	X			X			X			X			X			X			X	
TPH CWG GC (S)	All	NDPs: 0 Tests: 8		X			X			X			X			X			X			
VOC MS (W)	All	NDPs: 0 Tests: 8	X			X			X			X			X			X			X	

17215493	W134-38		0.00 - 0.00	60g VOC (ALE215)	S																														
				250g Amber Jar (ALE210)	S					X		X				X				X		X		X								X			
				1kg TUB	S		X		X						X				X												X				X
17215489	W134-37		0.00 - 0.00	60g VOC (ALE215)	S																														
				250g Amber Jar (ALE210)	S					X		X				X				X		X		X		X		X				X			

Sample Descriptions

Grain Sizes

very fine	<0.063mm	fine	0.063mm - 0.1mm	medium	0.1mm - 2mm	coarse	2mm - 10mm	very coarse	>10mm

Lab Sample No(s)	Customer Sample Ref.	Depth (m)	Colour	Description	Inclusions	Inclusions 2
17215461	W134-31	0.00 - 0.00	Dark Brown	Loamy Sand	Stones	Crushed Brick
17215466	W134-32	0.00 - 0.00	Dark Brown	Loamy Sand	Stones	Crushed Brick
17215470	W134-33	0.00 - 0.00	Dark Brown	Loamy Sand	Stones	Crushed Brick
17215474	W134-34	0.00 - 0.00	Dark Brown	Loamy Sand	Stones	Vegetation
17215478	W134-35	0.00 - 0.00	Dark Brown	Loamy Sand	Stones	Vegetation
17215485	W134-36	0.00 - 0.00	Dark Brown	Loamy Sand	Stones	Crushed Brick
17215489	W134-37	0.00 - 0.00	Dark Brown	Loamy Sand	Stones	Crushed Brick
17215493	W134-38	0.00 - 0.00	Dark Brown	Loamy Sand	Stones	Crushed Brick

These descriptions are only intended to act as a cross check if sample identities are questioned, and to provide a log of sample matrices with respect to MCERTS validation. They are not intended as full geological descriptions.

We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally ocurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample.

Other coarse granular materials such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

CERTIFICATE OF ANALYSIS

SDG: 180315-103 **Client Reference:** **Report Number:** 449692
Location: Llanwern **Order Number:** LLA413 **Superseded Report:** 449665

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	W134-31	W134-32	W134-33	W134-34	W134-35	W134-36
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	14/03/2018	14/03/2018	14/03/2018	14/03/2018	14/03/2018	14/03/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	15/03/2018	15/03/2018	15/03/2018	15/03/2018	15/03/2018	15/03/2018
			SDG Ref	180315-103	180315-103	180315-103	180315-103	180315-103	180315-103
			Lab Sample No.(s)	17215461	17215466	17215470	17215474	17215478	17215485
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		13	12	8.7	15	12	13
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	<12 M	<12 M	17.9 M	<12 M	<12 M
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	0.011 M	<0.01 M	<0.01 M	<0.01 M
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M
Sulphur, Total	<0.02 %	TM132		0.156		0.337		0.123	
Sulphate, Total potential	<0.06 %	TM132		0.468		1.01		0.369	
Soil Organic Matter (SOM)	<0.35 %	TM132		2.28 #	11.9 #	5.21 #	4.26 #	6.33 #	7.33 #
pH	1 pH Units	TM133		8.87 M	8.77 M	10.2 M	10.1 M	9.28 M	10.5 M
Cyanide, Total	<1 mg/kg	TM153		<1 M	<1 M	<1 M	1.98 M	<1 M	<1 M
Arsenic	<0.6 mg/kg	TM181		9.2 M	8.45 M	7.87 M	12.6 M	7.67 M	3.95 M
Cadmium	<0.02 mg/kg	TM181		0.328 M	0.546 M	1.51 M	0.114 M	1.32 M	<0.02 M
Chromium	<0.9 mg/kg	TM181		124 M	215 M	429 M	106 M	156 M	485 M
Copper	<1.4 mg/kg	TM181		9.9 M	19.3 M	20.6 M	25.7 M	27.3 M	3.79 M
Iron	<1000 mg/kg	TM181		50800 #	69100 #	147000 #	51700 #	60200 #	114000 #
Lead	<0.7 mg/kg	TM181		23.4 M	36.9 M	63.8 M	56.6 M	89.8 M	12.2 M
Manganese	<0.13 mg/kg	TM181		12600 M	10800 M	25400 M	6430 M	10100 M	23400 M
Mercury	<0.14 mg/kg	TM181		<0.14 M	<1.4 M	<1.4 M	<0.14 M	<1.4 M	<0.14 M
Nickel	<0.2 mg/kg	TM181		14.9 M	24.4 M	16.9 M	22.8 M	23.1 M	4.68 M
Selenium	<1 mg/kg	TM181		6.31 #	<10 #	14.4 #	3.84 #	<10 #	9.37 #
Vanadium	<0.2 mg/kg	TM181		134 #	191 #	493 #	242 #	203 #	595 #
Zinc	<1.9 mg/kg	TM181		113 M	136 M	197 M	194 M	259 M	57.4 M
Sulphate, acid soluble (total)	<0.02 %	TM221		0.476		0.51		0.65	
Calcium	<21 mg/kg	TM224		127000		203000		116000	
Magnesium	<8 mg/kg	TM224		12800		17500		11500	
Soluble Sulphate 2:1 extract as SO4 BRE	<0.004 g/l	TM243		0.105 M		0.0795 M		0.106 M	
Asbestos Quantification - Gravimetric - %	<0.001 %	TM304		<0.001 #		0.002 #			
Asbestos Quantification - PCOM Evaluation - %	<0.001 %	TM304		<0.001 #		<0.001 #			
Additional Asbestos Components (Using TM048)		TM304		None #		None #			
Analysts Comments		TM304		N/A		N/A			
Asbestos Quantification - Total - %	<0.001 %	TM304		<0.001 #		0.002 #			

CERTIFICATE OF ANALYSIS

SDG: 180315-103 **Client Reference:** **Report Number:** 449692
Location: Llanwern **Order Number:** LLA413 **Superseded Report:** 449665

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	W134-37	W134-38				
			Depth (m)	0.00 - 0.00	0.00 - 0.00				
			Sample Type	Soil/Solid (S)	Soil/Solid (S)				
			Date Sampled	14/03/2018	14/03/2018				
			Sample Time	00:00	00:00				
			Date Received	15/03/2018	15/03/2018				
			SDG Ref	180315-103	180315-103				
			Lab Sample No.(s)	17215489	17215493				
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		13	13				
Exchangeable Ammonia as N	<12 mg/kg	TM024		14.1 M	<12 M				
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M				
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M				
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M				
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 M				
Sulphur, Total	<0.02 %	TM132		0.196					
Sulphate, Total potential	<0.06 %	TM132		0.588					
Soil Organic Matter (SOM)	<0.35 %	TM132		5.28 #	4.12 #				
pH	1 pH Units	TM133		9.33 M	8.7 M				
Cyanide, Total	<1 mg/kg	TM153		<1 M	<1 M				
Arsenic	<0.6 mg/kg	TM181		14 M	20.2 M				
Cadmium	<0.02 mg/kg	TM181		0.911 M	<0.02 M				
Chromium	<0.9 mg/kg	TM181		100 M	18.2 M				
Copper	<1.4 mg/kg	TM181		30.7 M	41.3 M				
Iron	<1000 mg/kg	TM181		70600 #	117000 #				
Lead	<0.7 mg/kg	TM181		86 M	47.9 M				
Manganese	<0.13 mg/kg	TM181		9170 M	3450 M				
Mercury	<0.14 mg/kg	TM181		<0.14 M	<0.14 M				
Nickel	<0.2 mg/kg	TM181		22.9 M	40.2 M				
Selenium	<1 mg/kg	TM181		4.08 #	1.78 #				
Vanadium	<0.2 mg/kg	TM181		225 #	78.5 #				
Zinc	<1.9 mg/kg	TM181		253 M	155 M				
Sulphate, acid soluble (total)	<0.02 %	TM221		0.47					
Calcium	<21 mg/kg	TM224		129000					
Magnesium	<8 mg/kg	TM224		15300					
Soluble Sulphate 2:1 extract as SO4 BRE	<0.004 g/l	TM243		0.141 M					
Asbestos Quantification - Gravimetric - %	<0.001 %	TM304		0.0016 #					
Asbestos Quantification - PCOM Evaluation - %	<0.001 %	TM304		<0.001 #					
Additional Asbestos Components (Using TM048)		TM304		None #					
Analysts Comments		TM304		N/A					
Asbestos Quantification - Total - %	<0.001 %	TM304		0.0016 #					

Validated

CERTIFICATE OF ANALYSIS

SDG: 180315-103 **Client Reference:** **Report Number:** 449692
Location: Llanwern **Order Number:** LLA413 **Superseded Report:** 449665

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	W134-31	W134-32	W134-33	W134-34	W134-35	W134-36
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	14/03/2018	14/03/2018	14/03/2018	14/03/2018	14/03/2018	14/03/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	15/03/2018	15/03/2018	15/03/2018	15/03/2018	15/03/2018	15/03/2018
			SDG Ref	180315-103	180315-103	180315-103	180315-103	180315-103	180315-103
			Lab Sample No.(s)	17215461	17215466	17215470	17215474	17215478	17215485
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		97.8	93.6	99.5	98.6	101	97.2
Acenaphthene-d10 % recovery**	%	TM218		94.7	88.6	97.9	97.3	97.7	95.4
Phenanthrene-d10 % recovery**	%	TM218		95.3	89.3	100	98	97.7	97.7
Chrysene-d12 % recovery**	%	TM218		83.6	77.7	89.1	88.9	86.3	88.5
Perylene-d12 % recovery**	%	TM218		84.8	78.7	95.3	91.8	87.2	92.2
Naphthalene	<0.009 mg/kg	TM218		0.203 M	0.185 M	0.182 M	0.0983 M	0.292 M	0.316 M
Acenaphthylene	<0.012 mg/kg	TM218		0.165 M	0.124 M	0.104 M	0.035 M	0.0863 M	0.579 M
Acenaphthene	<0.008 mg/kg	TM218		0.0287 M	0.0256 M	0.0436 M	0.0287 M	0.0392 M	0.418 M
Fluorene	<0.01 mg/kg	TM218		0.155 M	0.0985 M	0.0859 M	0.0363 M	0.0744 M	2.21 M
Phenanthrene	<0.015 mg/kg	TM218		1.01 M	0.854 M	0.544 M	0.226 M	0.509 M	9.44 M
Anthracene	<0.016 mg/kg	TM218		0.311 M	0.299 M	0.197 M	0.0738 M	0.161 M	1.64 M
Fluoranthene	<0.017 mg/kg	TM218		2.18 M	2.17 M	1.79 M	0.384 M	1.31 M	7.92 M
Pyrene	<0.015 mg/kg	TM218		1.73 M	1.77 M	1.47 M	0.365 M	1.17 M	5.03 M
Benz(a)anthracene	<0.014 mg/kg	TM218		0.969 M	0.848 M	0.852 M	0.198 M	0.687 M	2.41 M
Chrysene	<0.01 mg/kg	TM218		0.781 M	0.68 M	0.714 M	0.196 M	0.586 M	1.7 M
Benzo(b)fluoranthene	<0.015 mg/kg	TM218		1.45 M	1.21 M	1.03 M	0.277 M	1.02 M	2.8 M
Benzo(k)fluoranthene	<0.014 mg/kg	TM218		0.497 M	0.368 M	0.477 M	0.134 M	0.441 M	0.967 M
Benzo(a)pyrene	<0.015 mg/kg	TM218		0.975 M	0.831 M	0.871 M	0.217 M	0.741 M	1.68 M
Indeno(1,2,3-cd)pyrene	<0.018 mg/kg	TM218		0.566 M	0.476 M	0.52 M	0.135 M	0.433 M	0.909 M
Dibenzo(a,h)anthracene	<0.023 mg/kg	TM218		0.16 M	0.133 M	0.161 M	0.0456 M	0.128 M	0.302 M
Benzo(g,h,i)perylene	<0.024 mg/kg	TM218		0.671 M	0.57 M	0.609 M	0.17 M	0.535 M	0.959 M
PAH, Total Detected USEPA 16	<0.118 mg/kg	TM218		11.9	10.6	9.66	2.62	8.21	39.3

Validated

CERTIFICATE OF ANALYSIS

SDG: 180315-103 **Client Reference:** **Report Number:** 449692
Location: Llanwern **Order Number:** LLA413 **Superseded Report:** 449665

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	W134-37	W134-38				
			Depth (m)	0.00 - 0.00	0.00 - 0.00				
			Sample Type	Soil/Solid (S)	Soil/Solid (S)				
			Date Sampled	14/03/2018	14/03/2018				
			Sample Time	00:00	00:00				
			Date Received	15/03/2018	15/03/2018				
			SDG Ref	180315-103	180315-103				
			Lab Sample No.(s)	17215489	17215493				
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		97.8	101				
Acenaphthene-d10 % recovery**	%	TM218		94.7	97.7				
Phenanthrene-d10 % recovery**	%	TM218		95.4	98				
Chrysene-d12 % recovery**	%	TM218		83.7	85				
Perylene-d12 % recovery**	%	TM218		84.6	87.9				
Naphthalene	<0.009 mg/kg	TM218		0.175 M	0.148 M				
Acenaphthylene	<0.012 mg/kg	TM218		0.075 M	0.0821 M				
Acenaphthene	<0.008 mg/kg	TM218		0.0488 M	0.0219 M				
Fluorene	<0.01 mg/kg	TM218		0.0686 M	0.0537 M				
Phenanthrene	<0.015 mg/kg	TM218		0.5 M	0.377 M				
Anthracene	<0.016 mg/kg	TM218		0.481 M	0.163 M				
Fluoranthene	<0.017 mg/kg	TM218		1.37 M	1.54 M				
Pyrene	<0.015 mg/kg	TM218		1.2 M	1.28 M				
Benz(a)anthracene	<0.014 mg/kg	TM218		0.619 M	0.627 M				
Chrysene	<0.01 mg/kg	TM218		0.775 M	0.531 M				
Benzo(b)fluoranthene	<0.015 mg/kg	TM218		1.66 M	0.786 M				
Benzo(k)fluoranthene	<0.014 mg/kg	TM218		0.391 M	0.32 M				
Benzo(a)pyrene	<0.015 mg/kg	TM218		0.837 M	0.592 M				
Indeno(1,2,3-cd)pyrene	<0.018 mg/kg	TM218		0.469 M	0.335 M				
Dibenzo(a,h)anthracene	<0.023 mg/kg	TM218		0.138 M	0.105 M				
Benzo(g,h,i)perylene	<0.024 mg/kg	TM218		0.572 M	0.396 M				
PAH, Total Detected USEPA 16	<0.118 mg/kg	TM218		9.38	7.35				

CERTIFICATE OF ANALYSIS

SDG: 180315-103 **Client Reference:** **Report Number:** 449692
Location: Llanwern **Order Number:** LLA413 **Superseded Report:** 449665

TPH CWG (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	W134-31	W134-32	W134-33	W134-34	W134-35	W134-36
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	14/03/2018	14/03/2018	14/03/2018	14/03/2018	14/03/2018	14/03/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	15/03/2018	15/03/2018	15/03/2018	15/03/2018	15/03/2018	15/03/2018
			SDG Ref	180315-103	180315-103	180315-103	180315-103	180315-103	180315-103
			Lab Sample No.(s)	17215461	17215466	17215470	17215474	17215478	17215485
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		68	68	105	86	95	57
GRO TOT (Moisture Corrected)	<0.044 mg/kg	TM089		<0.176 M	<0.176 M	1.11 M	1.28 M	0.237 M	<0.176 M
Methyl tertiary butyl ether (MTBE)	<0.005 mg/kg	TM089		<0.02 #	<0.02 #	<0.02 #	<0.02 #	<0.02 #	<0.02 #
Benzene	<0.01 mg/kg	TM089		<0.04 M	<0.04 M	<0.04 M	<0.04 M	<0.04 M	<0.04 M
Toluene	<0.002 mg/kg	TM089		<0.008 M	<0.008 M	<0.008 M	<0.008 M	<0.008 M	<0.008 M
Ethylbenzene	<0.003 mg/kg	TM089		<0.012 M	<0.012 M	<0.012 M	<0.012 M	<0.012 M	<0.012 M
m,p-Xylene	<0.006 mg/kg	TM089		<0.024 M	<0.024 M	<0.024 M	<0.024 M	<0.024 M	<0.024 M
o-Xylene	<0.003 mg/kg	TM089		<0.012 M	<0.012 M	<0.012 M	<0.012 M	<0.012 M	<0.012 M
sum of detected mpo xylene by GC	<0.009 mg/kg	TM089		<0.009	<0.009	<0.009	<0.009	<0.009	<0.009
sum of detected BTEX by GC	<0.024 mg/kg	TM089		<0.024	<0.024	<0.024	<0.024	<0.024	<0.024
Aliphatics >C5-C6	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Aliphatics >C6-C8	<0.01 mg/kg	TM089		<0.04	<0.04	0.119	0.092	0.0513	<0.04
Aliphatics >C8-C10	<0.01 mg/kg	TM089		<0.04	<0.04	0.166	0.138	0.0456	<0.04
Aliphatics >C10-C12	<0.01 mg/kg	TM089		<0.04	<0.04	0.399	0.551	0.0479	<0.04
Aliphatics >C12-C16	<0.1 mg/kg	TM173		8.91	10.6	6.3	23.3	3.85	5.74
Aliphatics >C16-C21	<0.1 mg/kg	TM173		29.3	32	20.4	45.9	23.4	14.7
Aliphatics >C21-C35	<0.1 mg/kg	TM173		62.2	69.7	46.8	82.2	60.7	35.5
Aliphatics >C35-C44	<0.1 mg/kg	TM173		18.2	23.2	11.2	27.3	13.4	8.46
Total Aliphatics >C12-C44	<0.1 mg/kg	TM173		119	135	84.7	179	101	64.5
Aromatics >EC5-EC7	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Aromatics >EC7-EC8	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Aromatics >EC8-EC10	<0.01 mg/kg	TM089		<0.04	<0.04	0.126	0.1	0.041	<0.04
Aromatics >EC10-EC12	<0.01 mg/kg	TM089		<0.04	<0.04	0.266	0.367	<0.04	<0.04
Aromatics >EC12-EC16	<0.1 mg/kg	TM173		2.39	2.77	2.82	5.63	2.51	3.37
Aromatics >EC16-EC21	<0.1 mg/kg	TM173		18.5	22.1	16.3	26.3	19.9	12.6
Aromatics >EC21-EC35	<0.1 mg/kg	TM173		59.3	62.8	49.7	52.4	67.8	40.5
Aromatics >EC35-EC44	<0.1 mg/kg	TM173		20.3	27.9	22.7	27.5	30	16.3
Aromatics >EC40-EC44	<0.1 mg/kg	TM173		7.32	11.5	8.37	11.8	11.1	5.84
Total Aromatics >EC12-EC44	<0.1 mg/kg	TM173		100	116	91.5	112	120	72.8
Total Aliphatics & Aromatics >C5-C44	<0.1 mg/kg	TM173		219	251	177	292	222	137

CERTIFICATE OF ANALYSIS

SDG: 180315-103 Client Reference: Report Number: 449692
Location: Llanwern Order Number: LLA413 Superseded Report: 449665

TPH CWG (S)

Results Legend		Customer Sample Ref.	W134-37	W134-38				
#	ISO17025 accredited.							
M	mCERTS accredited.							
aq	Aqueous / settled sample.							
diss.filt	Dissolved / filtered sample.	Depth (m)	0.00 - 0.00	0.00 - 0.00				
tot.unfilt	Total / unfiltered sample.	Sample Type	Soil/Solid (S)	Soil/Solid (S)				
*	Subcontracted test.	Date Sampled	14/03/2018	14/03/2018				
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery	Sample Time	00:00	00:00				
		Date Received	15/03/2018	15/03/2018				
		SDG Ref	180315-103	180315-103				
(F)	Trigger breach confirmed	Lab Sample No.(s)	17215489	17215493				
1-5&+§@	Sample deviation (see appendix)	AGS Reference						

Component	LOD/Units	Method						
GRO Surrogate % recovery**	%	TM089	113	79				
GRO TOT (Moisture Corrected)	<0.044 mg/kg	TM089	0.827 M	0.288 M				
Methyl tertiary butyl ether (MTBE)	<0.005 mg/kg	TM089	<0.02 #	<0.02 #				
Benzene	<0.01 mg/kg	TM089	<0.04 M	<0.04 M				
Toluene	<0.002 mg/kg	TM089	<0.008 M	<0.008 M				
Ethylbenzene	<0.003 mg/kg	TM089	<0.012 M	<0.012 M				
m,p-Xylene	<0.006 mg/kg	TM089	<0.024 M	<0.024 M				
o-Xylene	<0.003 mg/kg	TM089	<0.012 M	<0.012 M				
sum of detected mpo xylene by GC	<0.009 mg/kg	TM089	<0.009	<0.009				
sum of detected BTEX by GC	<0.024 mg/kg	TM089	<0.024	<0.024				
Aliphatics >C5-C6	<0.01 mg/kg	TM089	<0.04	<0.04				
Aliphatics >C6-C8	<0.01 mg/kg	TM089	0.0874	0.0644				
Aliphatics >C8-C10	<0.01 mg/kg	TM089	0.084	0.0529				
Aliphatics >C10-C12	<0.01 mg/kg	TM089	0.33	0.0725				
Aliphatics >C12-C16	<0.1 mg/kg	TM173	8.68	5.64				
Aliphatics >C16-C21	<0.1 mg/kg	TM173	27	16.3				
Aliphatics >C21-C35	<0.1 mg/kg	TM173	68.5	34.7				
Aliphatics >C35-C44	<0.1 mg/kg	TM173	15.4	10.5				
Total Aliphatics >C12-C44	<0.1 mg/kg	TM173	120	67.1				
Aromatics >EC5-EC7	<0.01 mg/kg	TM089	<0.04	<0.04				
Aromatics >EC7-EC8	<0.01 mg/kg	TM089	<0.04	<0.04				
Aromatics >EC8-EC10	<0.01 mg/kg	TM089	0.0702	<0.04				
Aromatics >EC10-EC12	<0.01 mg/kg	TM089	0.221	0.0483				
Aromatics >EC12-EC16	<0.1 mg/kg	TM173	3.53	1.31				
Aromatics >EC16-EC21	<0.1 mg/kg	TM173	20.7	11.1				
Aromatics >EC21-EC35	<0.1 mg/kg	TM173	67.1	34.8				
Aromatics >EC35-EC44	<0.1 mg/kg	TM173	27	12.5				
Aromatics >EC40-EC44	<0.1 mg/kg	TM173	9.72	4.75				
Total Aromatics >EC12-EC44	<0.1 mg/kg	TM173	118	59.8				
Total Aliphatics & Aromatics >C5-C44	<0.1 mg/kg	TM173	239	127				

CERTIFICATE OF ANALYSIS

SDG: 180315-103 **Client Reference:** **Report Number:** 449692
Location: Llanwern **Order Number:** LLA413 **Superseded Report:** 449665

Asbestos Identification - Solid Samples

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthophyllite	Fibrous Tremolite	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	W134-31 0.00 - 0.00 SOLID 14/03/2018 00:00:00 16/03/2018 12:04:43 180315-103 17215461 TM048	23/03/2018	James Richards	Fibre bundles in soil	Not Detected (#)	Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	W134-33 0.00 - 0.00 SOLID 14/03/2018 00:00:00 16/03/2018 11:22:43 180315-103 17215470 TM048	23/03/2018	Barbara Urbanek-Walsh	Fibre bundles in soil.	Not Detected (#)	Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	W134-35 0.00 - 0.00 SOLID 14/03/2018 00:00:00 16/03/2018 12:09:42 180315-103 17215478 TM048	23/03/2018	Andrzej Ferfecki	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	W134-37 0.00 - 0.00 SOLID 14/03/2018 00:00:00 16/03/2018 12:15:37 180315-103 17215489 TM048	23/03/2018	James Richards	Fibre bundles in soil	Not Detected (#)	Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected

CERTIFICATE OF ANALYSIS

SDG:	180315-103	**Client Reference:**		**Report Number:**	449692
Location:	Llanwern	**Order Number:**	LLA413	**Superseded Report:**	449665

Asbestos Quantification - Full

		Additional Asbestos Components (Using TM048)	Analysts Comments	Asbestos Quantification - Gravimetric - %	Asbestos Quantification - PCOM Evaluation - %	Asbestos Quantification - Total - %
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	W134-31 0.00 - 0.00 SOLID 14/03/2018 00:00:00 16/03/2018 12:06:30 180315-103 17215461 TM304	None (#)	N/A	<0.001 (#)	<0.001 (#)	<0.001 (#)
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	W134-33 0.00 - 0.00 SOLID 14/03/2018 00:00:00 16/03/2018 11:21:57 180315-103 17215470 TM304	None (#)	N/A	0.0020 (#)	<0.001 (#)	0.002 (#)
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	W134-37 0.00 - 0.00 SOLID 14/03/2018 00:00:00 16/03/2018 12:17:35 180315-103 17215489 TM304	None (#)	N/A	0.0016 (#)	<0.001 (#)	0.0016 (#)

CERTIFICATE OF ANALYSIS

SDG:	180315-103	**Client Reference:**		**Report Number:**	449692
Location:	Llanwern	**Order Number:**	LLA413	**Superseded Report:**	449665

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.104	**Natural Moisture Content (%)**	14.9
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	87
Particle Size <4mm	>95%		

Case	
SDG	180315-103
Lab Sample Number(s)	17215461
Sampled Date	14-Mar-2018
Customer Sample Ref.	W134-31
Depth (m)	0.00 - 0.00

Eluate Analysis	**C_2 Concⁿ in 10:1 eluate (mg/l)**		**A_2 10:1 concⁿ leached (mg/kg)**				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Naphthalene (diss.filt)	0.0000368	<0.00001	0.000368	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Acenaphthene (diss.filt)	0.00000562	<0.000005	0.0000562	<0.00005	-	-	-
Arsenic	0.00877	<0.0005	0.0877	<0.005	-	-	-
Acenaphthylene (diss.filt)	0.0000186	<0.000005	0.000186	<0.00005	-	-	-
Fluoranthene (diss.filt)	0.000381	<0.000005	0.00381	<0.00005	-	-	-
Anthracene (diss.filt)	0.0000417	<0.000005	0.000417	<0.00005	-	-	-
Iron	0.0676	<0.019	0.676	<0.19	-	-	-
Phenanthrene (diss.filt)	0.000102	<0.000005	0.00102	<0.00005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Fluorene (diss.filt)	0.0000184	<0.000005	0.000184	<0.00005	-	-	-
Chrysene (diss.filt)	0.000166	<0.000005	0.00166	<0.00005	-	-	-
Pyrene (diss.filt)	0.000339	<0.000005	0.00339	<0.00005	-	-	-
Benzo(a)anthracene (diss.filt)	0.000109	<0.000005	0.00109	<0.00005	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Benzo(b)fluoranthene (diss.filt)	0.000188	<0.000005	0.00188	<0.00005	-	-	-
Benzo(k)fluoranthene (diss.filt)	0.000132	<0.000005	0.00132	<0.00005	-	-	-
Benzo(a)pyrene (diss.filt)	0.000139	<0.000002	0.00139	<0.00002	-	-	-
Copper	0.00261	<0.0003	0.0261	<0.003	-	-	-
Dibenzo(a,h)anthracene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Benzo(g,h,i)perylene (diss.filt)	0.000138	<0.000005	0.00138	<0.00005	-	-	-
Indeno(1,2,3-cd)pyrene (diss.filt)	0.0000789	<0.000005	0.000789	<0.00005	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
PAH 16 EPA Total by GCMS (diss.filt)	0.00189	<0.000082	0.0189	<0.00082	-	-	-
Nickel	0.00072	<0.0004	0.0072	<0.004	-	-	-
Selenium	0.00346	<0.001	0.0346	<0.01	-	-	-
Vanadium	0.03	<0.001	0.3	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	19-Mar-2018
pH (pH Units)	8.94
Conductivity (µS/cm)	138.00
Temperature (°C)	17.90
Volume Leachant (Litres)	0.887

Mcerts Certification does not apply to leachates
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CERTIFICATE OF ANALYSIS

SDG: 180315-103 | Client Reference: | Report Number: 449692
Location: Llanwern | Order Number: LLA413 | Superseded Report: 449665

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.104	**Natural Moisture Content (%)**	14.9
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	87
Particle Size <4mm	>95%		

Case	
SDG	180315-103
Lab Sample Number(s)	17215461
Sampled Date	14-Mar-2018
Customer Sample Ref.	W134-31
Depth (m)	0.00 - 0.00

Eluate Analysis	**C_2 Concⁿ in 10:1 eluate (mg/l)**		**A_2 10:1 concⁿ leached (mg/kg)**				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
VOC MS (W)							
Benzene	0.00103	<0.001	0.0103	<0.01	-	-	-
Toluene	0.00106	<0.001	0.0106	<0.01	-	-	-
Ethylbenzene	<0.001	<0.001	<0.01	<0.01	-	-	-
p/m-Xylene	<0.001	<0.001	<0.01	<0.01	-	-	-
o-Xylene	<0.001	<0.001	<0.01	<0.01	-	-	-
Total Xylenes	<0.002	<0.002	<0.02	<0.02	-	-	-

Leach Test Information

Date Prepared	19-Mar-2018
pH (pH Units)	8.94
Conductivity (µS/cm)	138.00
Temperature (°C)	17.90
Volume Leachant (Litres)	0.887

Mcerts Certification does not apply to leachates
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CERTIFICATE OF ANALYSIS

SDG:	180315-103	**Client Reference:**		**Report Number:**	449692
Location:	Llanwern	**Order Number:**	LLA413	**Superseded Report:**	449665

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.102	**Natural Moisture Content (%)**	13.6
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	88
Particle Size <4mm	>95%		

Case	
SDG	180315-103
Lab Sample Number(s)	17215466
Sampled Date	14-Mar-2018
Customer Sample Ref.	W134-32
Depth (m)	0.00 - 0.00

Eluate Analysis	**C_2 Concⁿ in 10:1 eluate (mg/l)**		**A_2 10:1 concⁿ leached (mg/kg)**				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Naphthalene (diss.filt)	0.0000277	<0.00001	0.000277	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Acenaphthene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Arsenic	0.00735	<0.0005	0.0735	<0.005	-	-	-
Acenaphthylene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene (diss.filt)	0.0000355	<0.000005	0.000355	<0.00005	-	-	-
Anthracene (diss.filt)	0.00000596	<0.000005	0.0000596	<0.00005	-	-	-
Iron	0.12	<0.019	1.2	<0.19	-	-	-
Phenanthrene (diss.filt)	0.00002	<0.000005	0.0002	<0.00005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Fluorene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene (diss.filt)	0.0000282	<0.000005	0.000282	<0.00005	-	-	-
Benzo(a)anthracene (diss.filt)	0.00000715	<0.000005	0.0000715	<0.00005	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Benzo(b)fluoranthene (diss.filt)	0.00000682	<0.000005	0.0000682	<0.00005	-	-	-
Benzo(k)fluoranthene (diss.filt)	0.00000513	<0.000005	0.0000513	<0.00005	-	-	-
Benzo(a)pyrene (diss.filt)	0.00000457	<0.000002	0.0000457	<0.00002	-	-	-
Copper	0.00127	<0.0003	0.0127	<0.003	-	-	-
Dibenzo(a,h)anthracene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Benzo(g,h,i)perylene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(1,2,3-cd)pyrene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS (diss.filt)	0.000141	<0.000082	0.00141	<0.00082	-	-	-
Nickel	0.000454	<0.0004	0.00454	<0.004	-	-	-
Selenium	0.00274	<0.001	0.0274	<0.01	-	-	-
Vanadium	0.0411	<0.001	0.411	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	19-Mar-2018
pH (pH Units)	9.19
Conductivity (µS/cm)	101.00
Temperature (°C)	18.30
Volume Leachant (Litres)	0.888

Mcerts Certification does not apply to leachates
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CERTIFICATE OF ANALYSIS

SDG: 180315-103 | Client Reference: | Report Number: 449692
Location: Llanwern | Order Number: LLA413 | Superseded Report: 449665

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.102	**Natural Moisture Content (%)**	13.6
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	88
Particle Size <4mm	>95%		

Case	
SDG	180315-103
Lab Sample Number(s)	17215466
Sampled Date	14-Mar-2018
Customer Sample Ref.	W134-32
Depth (m)	0.00 - 0.00

Eluate Analysis	**C_2 Conc^n in 10:1 eluate (mg/l)**		**A_2 10:1 conc^n leached (mg/kg)**				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
VOC MS (W)							
Benzene	0.00121	<0.001	0.0121	<0.01	-	-	-
Toluene	<0.001	<0.001	<0.01	<0.01	-	-	-
Ethylbenzene	<0.001	<0.001	<0.01	<0.01	-	-	-
p/m-Xylene	<0.001	<0.001	<0.01	<0.01	-	-	-
o-Xylene	<0.001	<0.001	<0.01	<0.01	-	-	-
Total Xylenes	<0.002	<0.002	<0.02	<0.02	-	-	-

Leach Test Information

Date Prepared	19-Mar-2018
pH (pH Units)	9.19
Conductivity (µS/cm)	101.00
Temperature (°C)	18.30
Volume Leachant (Litres)	0.888

Mcerts Certification does not apply to leachates
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CERTIFICATE OF ANALYSIS

SDG:	180315-103	**Client Reference:**		**Report Number:**	449692
Location:	Llanwern	**Order Number:**	LLA413	**Superseded Report:**	449665

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.099	**Natural Moisture Content (%)**	9.53
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	91.3
Particle Size <4mm	>95%		

Case	
SDG	180315-103
Lab Sample Number(s)	17215470
Sampled Date	14-Mar-2018
Customer Sample Ref.	W134-33
Depth (m)	0.00 - 0.00

Eluate Analysis	**C_2 Concⁿ in 10:1 eluate (mg/l)**		**A_2 10:1 concⁿ leached (mg/kg)**				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Naphthalene (diss.filt)	0.0000624	<0.00001	0.000624	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Acenaphthene (diss.filt)	0.0000284	<0.000005	0.000284	<0.00005	-	-	-
Arsenic	0.00635	<0.0005	0.0635	<0.005	-	-	-
Acenaphthylene (diss.filt)	0.00000815	<0.000005	0.0000815	<0.00005	-	-	-
Fluoranthene (diss.filt)	0.0000588	<0.000005	0.000588	<0.00005	-	-	-
Anthracene (diss.filt)	0.0000158	<0.000005	0.000158	<0.00005	-	-	-
Iron	0.0483	<0.019	0.483	<0.19	-	-	-
Phenanthrene (diss.filt)	0.0000703	<0.000005	0.000703	<0.00005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Fluorene (diss.filt)	0.000016	<0.000005	0.00016	<0.00005	-	-	-
Chrysene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene (diss.filt)	0.0000642	<0.000005	0.000642	<0.00005	-	-	-
Benzo(a)anthracene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Benzo(b)fluoranthene (diss.filt)	0.00000835	<0.000005	0.0000835	<0.00005	-	-	-
Benzo(k)fluoranthene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene (diss.filt)	0.00000494	<0.000002	0.0000494	<0.00002	-	-	-
Copper	0.00395	<0.0003	0.0395	<0.003	-	-	-
Dibenzo(a,h)anthracene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Benzo(g,h,i)perylene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(1,2,3-cd)pyrene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
PAH 16 EPA Total by GCMS (diss.filt)	0.000337	<0.000082	0.00337	<0.00082	-	-	-
Nickel	0.000623	<0.0004	0.00623	<0.004	-	-	-
Selenium	0.00488	<0.001	0.0488	<0.01	-	-	-
Vanadium	0.135	<0.001	1.35	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	19-Mar-2018
pH (pH Units)	10.42
Conductivity (µS/cm)	218.00
Temperature (°C)	17.90
Volume Leachant (Litres)	0.891

Mcerts Certification does not apply to leachates
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CERTIFICATE OF ANALYSIS

SDG: 180315-103 | Client Reference: | Report Number: 449692
Location: Llanwern | Order Number: LLA413 | Superseded Report: 449665

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.099	**Natural Moisture Content (%)**	9.53
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	91.3
Particle Size <4mm	>95%		

Case	
SDG	180315-103
Lab Sample Number(s)	17215470
Sampled Date	14-Mar-2018
Customer Sample Ref.	W134-33
Depth (m)	0.00 - 0.00

Eluate Analysis	**C_2 Concⁿ in 10:1 eluate (mg/l)**		**A_2 10:1 concⁿ leached (mg/kg)**				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
VOC MS (W)							
Benzene	0.00213	<0.001	0.0213	<0.01	-	-	-
Toluene	0.0024	<0.001	0.024	<0.01	-	-	-
Ethylbenzene	<0.001	<0.001	<0.01	<0.01	-	-	-
p/m-Xylene	0.00145	<0.001	0.0145	<0.01	-	-	-
o-Xylene	<0.001	<0.001	<0.01	<0.01	-	-	-
Total Xylenes	<0.002	<0.002	<0.02	<0.02	-	-	-

Leach Test Information

Date Prepared	19-Mar-2018
pH (pH Units)	10.42
Conductivity (µS/cm)	218.00
Temperature (°C)	17.90
Volume Leachant (Litres)	0.891

Mcerts Certification does not apply to leachates
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CERTIFICATE OF ANALYSIS

SDG:	180315-103	**Client Reference:**		**Report Number:**	449692
Location:	Llanwern	**Order Number:**	LLA413	**Superseded Report:**	449665

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.107	**Natural Moisture Content (%)**	19.8
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	83.5
Particle Size <4mm	>95%		

Case	
SDG	180315-103
Lab Sample Number(s)	17215474
Sampled Date	14-Mar-2018
Customer Sample Ref.	W134-34
Depth (m)	0.00 - 0.00

Eluate Analysis	**C_2 Concⁿ in 10:1 eluate (mg/l)**		**A_2 10:1 concⁿ leached (mg/kg)**				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	0.313	<0.2	3.13	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Naphthalene (diss.filt)	0.000043	<0.00001	0.00043	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Acenaphthene (diss.filt)	0.0000627	<0.000005	0.000627	<0.00005	-	-	-
Arsenic	0.00754	<0.0005	0.0754	<0.005	-	-	-
Acenaphthylene (diss.filt)	0.00000743	<0.000005	0.0000743	<0.00005	-	-	-
Fluoranthene (diss.filt)	0.0000462	<0.000005	0.000462	<0.00005	-	-	-
Anthracene (diss.filt)	0.0000282	<0.000005	0.000282	<0.00005	-	-	-
Iron	0.0303	<0.019	0.303	<0.19	-	-	-
Phenanthrene (diss.filt)	0.0000591	<0.000005	0.000591	<0.00005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Fluorene (diss.filt)	0.000018	<0.000005	0.00018	<0.00005	-	-	-
Chrysene (diss.filt)	0.00000519	<0.000005	0.0000519	<0.00005	-	-	-
Pyrene (diss.filt)	0.0000419	<0.000005	0.000419	<0.00005	-	-	-
Benzo(a)anthracene (diss.filt)	0.00000616	<0.000005	0.0000616	<0.00005	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Benzo(b)fluoranthene (diss.filt)	0.00000757	<0.000005	0.0000757	<0.00005	-	-	-
Benzo(k)fluoranthene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene (diss.filt)	0.00000426	<0.000002	0.0000426	<0.00002	-	-	-
Copper	0.0109	<0.0003	0.109	<0.003	-	-	-
Dibenzo(a,h)anthracene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Benzo(g,h,i)perylene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(1,2,3-cd)pyrene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
PAH 16 EPA Total by GCMS (diss.filt)	0.00033	<0.000082	0.0033	<0.00082	-	-	-
Nickel	0.00068	<0.0004	0.0068	<0.004	-	-	-
Selenium	0.00499	<0.001	0.0499	<0.01	-	-	-
Vanadium	0.147	<0.001	1.47	<0.01	-	-	-
Zinc	0.0043	<0.001	0.043	<0.01	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	16-Mar-2018
pH (pH Units)	10.33
Conductivity (µS/cm)	191.00
Temperature (°C)	18.70
Volume Leachant (Litres)	0.882

Mcerts Certification does not apply to leachates
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CERTIFICATE OF ANALYSIS

SDG: 180315-103 | Client Reference: | Report Number: 449692
Location: Llanwern | Order Number: LLA413 | Superseded Report: 449665

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.107	**Natural Moisture Content (%)**	19.8
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	83.5
Particle Size <4mm	>95%		

Case	
SDG	180315-103
Lab Sample Number(s)	17215474
Sampled Date	14-Mar-2018
Customer Sample Ref.	W134-34
Depth (m)	0.00 - 0.00

Eluate Analysis	**C_2 Concⁿ in 10:1 eluate (mg/l)**		**A_2 10:1 concⁿ leached (mg/kg)**				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	0.027	<0.01	0.27	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
VOC MS (W)							
Benzene	<0.1	<0.1	<1	<1	-	-	-
Toluene	<0.1	<0.1	<1	<1	-	-	-
Ethylbenzene	<0.1	<0.1	<1	<1	-	-	-
p/m-Xylene	<0.1	<0.1	<1	<1	-	-	-
o-Xylene	<0.1	<0.1	<1	<1	-	-	-
Total Xylenes	<0.2	<0.2	<2	<2	-	-	-

Leach Test Information

Date Prepared	16-Mar-2018
pH (pH Units)	10.33
Conductivity (µS/cm)	191.00
Temperature (°C)	18.70
Volume Leachant (Litres)	0.882

Mcerts Certification does not apply to leachates
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CERTIFICATE OF ANALYSIS

SDG: 180315-103 | Client Reference: | Report Number: 449692
Location: Llanwern | Order Number: LLA413 | Superseded Report: 449665

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.102	**Natural Moisture Content (%)**	13.6
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	88
Particle Size <4mm	>95%		

Case	
SDG	180315-103
Lab Sample Number(s)	17215478
Sampled Date	14-Mar-2018
Customer Sample Ref.	W134-35
Depth (m)	0.00 - 0.00

Eluate Analysis	**C_2 Concⁿ in 10:1 eluate (mg/l)**		**A_2 10:1 concⁿ leached (mg/kg)**				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	0.284	<0.2	2.84	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Naphthalene (diss.filt)	0.0000392	<0.00001	0.000392	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Acenaphthene (diss.filt)	0.0000141	<0.000005	0.000141	<0.00005	-	-	-
Arsenic	0.0119	<0.0005	0.119	<0.005	-	-	-
Acenaphthylene (diss.filt)	0.00000544	<0.000005	0.0000544	<0.00005	-	-	-
Fluoranthene (diss.filt)	0.0000363	<0.000005	0.000363	<0.00005	-	-	-
Anthracene (diss.filt)	0.00000884	<0.000005	0.0000884	<0.00005	-	-	-
Iron	0.0392	<0.019	0.392	<0.19	-	-	-
Phenanthrene (diss.filt)	0.0000319	<0.000005	0.000319	<0.00005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Fluorene (diss.filt)	0.0000114	<0.000005	0.000114	<0.00005	-	-	-
Chrysene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene (diss.filt)	0.0000364	<0.000005	0.000364	<0.00005	-	-	-
Benzo(a)anthracene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Benzo(b)fluoranthene (diss.filt)	0.0000117	<0.000005	0.000117	<0.00005	-	-	-
Benzo(k)fluoranthene (diss.filt)	0.00000735	<0.000005	0.0000735	<0.00005	-	-	-
Benzo(a)pyrene (diss.filt)	0.00000383	<0.000002	0.0000383	<0.00002	-	-	-
Copper	0.00442	<0.0003	0.0442	<0.003	-	-	-
Dibenzo(a,h)anthracene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Benzo(g,h,i)perylene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(1,2,3-cd)pyrene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Manganese	0.00346	<0.003	0.0346	<0.03	-	-	-
PAH 16 EPA Total by GCMS (diss.filt)	0.000206	<0.000082	0.00206	<0.00082	-	-	-
Nickel	0.000823	<0.0004	0.00823	<0.004	-	-	-
Selenium	0.00469	<0.001	0.0469	<0.01	-	-	-
Vanadium	0.153	<0.001	1.53	<0.01	-	-	-
Zinc	0.00111	<0.001	0.0111	<0.01	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	19-Mar-2018
pH (pH Units)	9.50
Conductivity (µS/cm)	145.00
Temperature (°C)	17.80
Volume Leachant (Litres)	0.888

Mcerts Certification does not apply to leachates
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CERTIFICATE OF ANALYSIS

SDG:	180315-103	**Client Reference:**		**Report Number:**	449692
Location:	Llanwern	**Order Number:**	LLA413	**Superseded Report:**	449665

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.102	**Natural Moisture Content (%)**	13.6
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	88
Particle Size <4mm	>95%		

Case	
SDG	180315-103
Lab Sample Number(s)	17215478
Sampled Date	14-Mar-2018
Customer Sample Ref.	W134-35
Depth (m)	0.00 - 0.00

Eluate Analysis	**C_2 Concⁿ in 10:1 eluate (mg/l)**		**A_2 10:1 concⁿ leached (mg/kg)**				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
VOC MS (W)							
Benzene	0.00162	<0.001	0.0162	<0.01	-	-	-
Toluene	0.00132	<0.001	0.0132	<0.01	-	-	-
Ethylbenzene	<0.001	<0.001	<0.01	<0.01	-	-	-
p/m-Xylene	<0.001	<0.001	<0.01	<0.01	-	-	-
o-Xylene	<0.001	<0.001	<0.01	<0.01	-	-	-
Total Xylenes	<0.002	<0.002	<0.02	<0.02	-	-	-

Leach Test Information

Date Prepared	19-Mar-2018
pH (pH Units)	9.50
Conductivity (µS/cm)	145.00
Temperature (°C)	17.80
Volume Leachant (Litres)	0.888

Mcerts Certification does not apply to leachates
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CERTIFICATE OF ANALYSIS

SDG:	180315-103	**Client Reference:**		**Report Number:**	449692
Location:	Llanwern	**Order Number:**	LLA413	**Superseded Report:**	449665

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.103	**Natural Moisture Content (%)**	14.9
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	87
Particle Size <4mm	>95%		

Case	
SDG	180315-103
Lab Sample Number(s)	17215485
Sampled Date	14-Mar-2018
Customer Sample Ref.	W134-36
Depth (m)	0.00 - 0.00

Eluate Analysis	**C_2 Concⁿ in 10:1 eluate (mg/l)**		**A_2 10:1 concⁿ leached (mg/kg)**				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Naphthalene (diss.filt)	0.0000715	<0.00001	0.000715	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Acenaphthene (diss.filt)	0.0000838	<0.000005	0.000838	<0.00005	-	-	-
Arsenic	0.0175	<0.0005	0.175	<0.005	-	-	-
Acenaphthylene (diss.filt)	0.00000908	<0.000005	0.0000908	<0.00005	-	-	-
Fluoranthene (diss.filt)	0.000177	<0.000005	0.00177	<0.00005	-	-	-
Anthracene (diss.filt)	0.000021	<0.000005	0.00021	<0.00005	-	-	-
Iron	0.0774	<0.019	0.774	<0.19	-	-	-
Phenanthrene (diss.filt)	0.000155	<0.000005	0.00155	<0.00005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Fluorene (diss.filt)	0.0000339	<0.000005	0.000339	<0.00005	-	-	-
Chrysene (diss.filt)	0.0000182	<0.000005	0.000182	<0.00005	-	-	-
Pyrene (diss.filt)	0.00015	<0.000005	0.0015	<0.00005	-	-	-
Benzo(a)anthracene (diss.filt)	0.0000195	<0.000005	0.000195	<0.00005	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Benzo(b)fluoranthene (diss.filt)	0.0000194	<0.000005	0.000194	<0.00005	-	-	-
Benzo(k)fluoranthene (diss.filt)	0.0000158	<0.000005	0.000158	<0.00005	-	-	-
Benzo(a)pyrene (diss.filt)	0.0000126	<0.000002	0.000126	<0.00002	-	-	-
Copper	0.0109	<0.0003	0.109	<0.003	-	-	-
Dibenzo(a,h)anthracene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Lead	0.00105	<0.0002	0.0105	<0.002	-	-	-
Benzo(g,h,i)perylene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(1,2,3-cd)pyrene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Manganese	0.00554	<0.003	0.0554	<0.03	-	-	-
PAH 16 EPA Total by GCMS (diss.filt)	0.000787	<0.000082	0.00787	<0.00082	-	-	-
Nickel	0.00183	<0.0004	0.0183	<0.004	-	-	-
Selenium	0.0057	<0.001	0.057	<0.01	-	-	-
Vanadium	0.194	<0.001	1.94	<0.01	-	-	-
Zinc	0.00168	<0.001	0.0168	<0.01	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	19-Mar-2018
pH (pH Units)	9.26
Conductivity (µS/cm)	171.00
Temperature (°C)	17.90
Volume Leachant (Litres)	0.887

Mcerts Certification does not apply to leachates
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CERTIFICATE OF ANALYSIS

SDG: 180315-103 | Client Reference: | Report Number: 449692
Location: Llanwern | Order Number: LLA413 | Superseded Report: 449665

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.103	**Natural Moisture Content (%)**	14.9
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	87
Particle Size <4mm	>95%		

Case	
SDG	180315-103
Lab Sample Number(s)	17215485
Sampled Date	14-Mar-2018
Customer Sample Ref.	W134-36
Depth (m)	0.00 - 0.00

Eluate Analysis	**C_2 Concⁿ in 10:1 eluate (mg/l)**		**A_2 10:1 concⁿ leached (mg/kg)**				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
VOC MS (W)							
Benzene	0.00144	<0.001	0.0144	<0.01	-	-	-
Toluene	0.00164	<0.001	0.0164	<0.01	-	-	-
Ethylbenzene	<0.001	<0.001	<0.01	<0.01	-	-	-
p/m-Xylene	<0.001	<0.001	<0.01	<0.01	-	-	-
o-Xylene	<0.001	<0.001	<0.01	<0.01	-	-	-
Total Xylenes	<0.002	<0.002	<0.02	<0.02	-	-	-

Leach Test Information

Date Prepared	19-Mar-2018
pH (pH Units)	9.26
Conductivity (µS/cm)	171.00
Temperature (°C)	17.90
Volume Leachant (Litres)	0.887

Mcerts Certification does not apply to leachates
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CERTIFICATE OF ANALYSIS

SDG:	180315-103	**Client Reference:**		**Report Number:**	449692
Location:	Llanwern	**Order Number:**	LLA413	**Superseded Report:**	449665

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.103	**Natural Moisture Content (%)**	14.9
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	87
Particle Size <4mm	>95%		

Case	
SDG	180315-103
Lab Sample Number(s)	17215489
Sampled Date	14-Mar-2018
Customer Sample Ref.	W134-37
Depth (m)	0.00 - 0.00

Eluate Analysis	**C_2 Concⁿ in 10:1 eluate (mg/l)**		**A_2 10:1 concⁿ leached (mg/kg)**				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Naphthalene (diss.filt)	0.000033	<0.00001	0.00033	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Acenaphthene (diss.filt)	0.00000999	<0.000005	0.0000999	<0.00005	-	-	-
Arsenic	0.0108	<0.0005	0.108	<0.005	-	-	-
Acenaphthylene (diss.filt)	0.00000655	<0.000005	0.0000655	<0.00005	-	-	-
Fluoranthene (diss.filt)	0.000091	<0.000005	0.00091	<0.00005	-	-	-
Anthracene (diss.filt)	0.0000129	<0.000005	0.000129	<0.00005	-	-	-
Iron	0.042	<0.019	0.42	<0.19	-	-	-
Phenanthrene (diss.filt)	0.0000563	<0.000005	0.000563	<0.00005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Fluorene (diss.filt)	0.0000181	<0.000005	0.000181	<0.00005	-	-	-
Chrysene (diss.filt)	0.0000111	<0.000005	0.000111	<0.00005	-	-	-
Pyrene (diss.filt)	0.0000843	<0.000005	0.000843	<0.00005	-	-	-
Benzo(a)anthracene (diss.filt)	0.00000948	<0.000005	0.0000948	<0.00005	-	-	-
Chromium	0.00169	<0.001	0.0169	<0.01	-	-	-
Benzo(b)fluoranthene (diss.filt)	0.0000233	<0.000005	0.000233	<0.00005	-	-	-
Benzo(k)fluoranthene (diss.filt)	0.0000153	<0.000005	0.000153	<0.00005	-	-	-
Benzo(a)pyrene (diss.filt)	0.000012	<0.000002	0.00012	<0.00002	-	-	-
Copper	0.00377	<0.0003	0.0377	<0.003	-	-	-
Dibenzo(a,h)anthracene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Benzo(g,h,i)perylene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(1,2,3-cd)pyrene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
PAH 16 EPA Total by GCMS (diss.filt)	0.000384	<0.000082	0.00384	<0.00082	-	-	-
Nickel	0.00066	<0.0004	0.0066	<0.004	-	-	-
Selenium	0.00385	<0.001	0.0385	<0.01	-	-	-
Vanadium	0.131	<0.001	1.31	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	19-Mar-2018
pH (pH Units)	9.43
Conductivity (µS/cm)	145.00
Temperature (°C)	17.70
Volume Leachant (Litres)	0.887

Mcerts Certification does not apply to leachates
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CERTIFICATE OF ANALYSIS

SDG: 180315-103 | Client Reference: | Report Number: 449692
Location: Llanwern | Order Number: LLA413 | Superseded Report: 449665

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.103	**Natural Moisture Content (%)**	14.9
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	87
Particle Size <4mm	>95%		

Case	
SDG	180315-103
Lab Sample Number(s)	17215489
Sampled Date	14-Mar-2018
Customer Sample Ref.	W134-37
Depth (m)	0.00 - 0.00

Eluate Analysis	**C_2 Concⁿ in 10:1 eluate (mg/l)**		**A_2 10:1 concⁿ leached (mg/kg)**				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
VOC MS (W)							
Benzene	0.00203	<0.001	0.0203	<0.01	-	-	-
Toluene	0.0021	<0.001	0.021	<0.01	-	-	-
Ethylbenzene	<0.001	<0.001	<0.01	<0.01	-	-	-
p/m-Xylene	<0.001	<0.001	<0.01	<0.01	-	-	-
o-Xylene	<0.001	<0.001	<0.01	<0.01	-	-	-
Total Xylenes	<0.002	<0.002	<0.02	<0.02	-	-	-

Leach Test Information

Date Prepared	19-Mar-2018
pH (pH Units)	9.43
Conductivity (µS/cm)	145.00
Temperature (°C)	17.70
Volume Leachant (Litres)	0.887

Mcerts Certification does not apply to leachates
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CERTIFICATE OF ANALYSIS

SDG: 180315-103 | Client Reference: | Report Number: 449692
Location: Llanwern | Order Number: LLA413 | Superseded Report: 449665

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.103	**Natural Moisture Content (%)**	14.9
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	87
Particle Size <4mm	>95%		

Case	
SDG	180315-103
Lab Sample Number(s)	17215493
Sampled Date	14-Mar-2018
Customer Sample Ref.	W134-38
Depth (m)	0.00 - 0.00

Eluate Analysis	**C_2 Concⁿ in 10:1 eluate (mg/l)**		**A_2 10:1 concⁿ leached (mg/kg)**				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Naphthalene (diss.filt)	0.0000466	<0.00001	0.000466	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Acenaphthene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Arsenic	0.00568	<0.0005	0.0568	<0.005	-	-	-
Acenaphthylene (diss.filt)	0.00000874	<0.000005	0.0000874	<0.00005	-	-	-
Fluoranthene (diss.filt)	0.00007	<0.000005	0.0007	<0.00005	-	-	-
Anthracene (diss.filt)	0.0000135	<0.000005	0.000135	<0.00005	-	-	-
Iron	0.038	<0.019	0.38	<0.19	-	-	-
Phenanthrene (diss.filt)	0.0000546	<0.000005	0.000546	<0.00005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Fluorene (diss.filt)	0.0000194	<0.000005	0.000194	<0.00005	-	-	-
Chrysene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene (diss.filt)	0.000058	<0.000005	0.00058	<0.00005	-	-	-
Benzo(a)anthracene (diss.filt)	0.00000923	<0.000005	0.0000923	<0.00005	-	-	-
Chromium	0.0013	<0.001	0.013	<0.01	-	-	-
Benzo(b)fluoranthene (diss.filt)	0.0000101	<0.000005	0.000101	<0.00005	-	-	-
Benzo(k)fluoranthene (diss.filt)	0.00000689	<0.000005	0.0000689	<0.00005	-	-	-
Benzo(a)pyrene (diss.filt)	0.00000605	<0.000002	0.0000605	<0.00002	-	-	-
Copper	0.00169	<0.0003	0.0169	<0.003	-	-	-
Dibenzo(a,h)anthracene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Lead	0.000421	<0.0002	0.00421	<0.002	-	-	-
Benzo(g,h,i)perylene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(1,2,3-cd)pyrene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Manganese	0.00416	<0.003	0.0416	<0.03	-	-	-
PAH 16 EPA Total by GCMS (diss.filt)	0.000303	<0.000082	0.00303	<0.00082	-	-	-
Nickel	0.000641	<0.0004	0.00641	<0.004	-	-	-
Selenium	0.00282	<0.001	0.0282	<0.01	-	-	-
Vanadium	0.035	<0.001	0.35	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	19-Mar-2018
pH (pH Units)	9.33
Conductivity (µS/cm)	157.00
Temperature (°C)	18.10
Volume Leachant (Litres)	0.887

Mcerts Certification does not apply to leachates
27/03/2018 17:26:32

17:26:11 27/03/2018

CERTIFICATE OF ANALYSIS

SDG: 180315-103 | Client Reference: | Report Number: 449692
Location: Llanwern | Order Number: LLA413 | Superseded Report: 449665

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.103	**Natural Moisture Content (%)**	14.9
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	87
Particle Size <4mm	>95%		

Case	
SDG	180315-103
Lab Sample Number(s)	17215493
Sampled Date	14-Mar-2018
Customer Sample Ref.	W134-38
Depth (m)	0.00 - 0.00

Eluate Analysis	**C_2 Concⁿ in 10:1 eluate (mg/l)**		**A_2 10:1 concⁿ leached (mg/kg)**				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
VOC MS (W)							
Benzene	<0.001	<0.001	<0.01	<0.01	-	-	-
Toluene	<0.001	<0.001	<0.01	<0.01	-	-	-
Ethylbenzene	<0.001	<0.001	<0.01	<0.01	-	-	-
p/m-Xylene	<0.001	<0.001	<0.01	<0.01	-	-	-
o-Xylene	<0.001	<0.001	<0.01	<0.01	-	-	-
Total Xylenes	<0.002	<0.002	<0.02	<0.02	-	-	-

Leach Test Information

Date Prepared	19-Mar-2018
pH (pH Units)	9.33
Conductivity (µS/cm)	157.00
Temperature (°C)	18.10
Volume Leachant (Litres)	0.887

Mcerts Certification does not apply to leachates
27/03/2018 17:26:32

17:26:11 27/03/2018

Table of Results - Appendix

Method No	Reference	Description
ASB_PREP		
PM001		Preparation of Samples for Metals Analysis
PM024	Modified BS 1377	Soil preparation including homogenisation, moisture screens of soils for Asbestos Containing Material
PM115		Leaching Procedure for CEN One Stage Leach Test 2:1 & 10:1 1 Step
TM024	Method 4500A & B, AWWA/APHA, 20th Ed., 1999	Determination of Exchangeable Ammonium and Ammoniacal Nitrogen as N by titration on solids
TM048	HSG 248, Asbestos: The analysts' guide for sampling, analysis and clearance procedures	Identification of Asbestos in Bulk Material
TM061	Method for the Determination of EPH,Massachusetts Dept.of EP, 1998	Determination of Extractable Petroleum Hydrocarbons by GC-FID (C10-C40)
TM062 (S)	National Grid Property Holdings Methods for the Collection & Analysis of Samples from National Grid Sites version 1 Sec 3.9	Determination of Phenols in Soils by HPLC
TM089	Modified: US EPA Methods 8020 & 602	Determination of Gasoline Range Hydrocarbons (GRO) and BTEX (MTBE) compounds by Headspace GC-FID (C4-C12)
TM099	BS 2690: Part 7:1968 / BS 6068: Part2.11:1984	Determination of Ammonium in Water Samples using the Kone Analyser
TM132	In - house Method	ELTRA CS800 Operators Guide
TM133	BS 1377: Part 3 1990;BS 6068-2.5	Determination of pH in Soil and Water using the GLpH pH Meter
TM152	Method 3125B, AWWA/APHA, 20th Ed., 1999	Analysis of Aqueous Samples by ICP-MS
TM153	Method 4500A,B,C, I, M AWWA/APHA, 20th Ed., 1999	Determination of Total Cyanide, Free (Easily Liberatable) Cyanide and Thiocyanate using the Skalar SANS+ System Segmented Flow Analyser
TM173	Analysis of Petroleum Hydrocarbons in Environmental Media – Total Petroleum Hydrocarbon Criteria	Determination of Speciated Extractable Petroleum Hydrocarbons in Soils by GC-FID
TM174	Analysis of Petroleum Hydrocarbons in Environmental Media – Total Petroleum Hydrocarbon Criteria	Determination of Speciated Extractable Petroleum Hydrocarbons in Waters by GC-FID
TM178	Modified: US EPA Method 8100	Determination of Polynuclear Aromatic Hydrocarbons (PAH) by GC-MS in Waters
TM181	US EPA Method 6010B	Determination of Routine Metals in Soil by iCap 6500 Duo ICP-OES
TM183	BS EN 23506:2002, (BS 6068-2.74:2002) ISBN 0 580 38924 3	Determination of Trace Level Mercury in Waters and Leachates by PSA Cold Vapour Atomic Fluorescence Spectrometry
TM208	Modified: US EPA Method 8260b & 624	Determination of Volatile Organic Compounds by Headspace / GC-MS in Waters
TM218	Determination of PAH by GCMS Microwave extraction	The determination of PAH in soil samples by microwave extraction and GC-MS
TM221	Inductively Coupled Plasma - Atomic Emission Spectroscopy. An Atlas of Spectral Information: Winge, Fassel, Peterson and Floyd	Determination of Acid extractable Sulphate in Soils by IRIS Emission Spectrometer
TM224	US EPA Method 6010B	Determination of Alkaline Metals by iCap 6500 Duo ICP-OES
TM227	Standard methods for the examination of waters and wastewaters 20th Edition, AWWA/APHA Method 4500.	Determination of Total Cyanide, Free (Easily Liberatable) Cyanide and Thiocyanate
TM228	US EPA Method 6010B	Determination of Major Cations in Water by iCap 6500 Duo ICP-OES
TM243		Mixed Anions In Soils By Kone
TM245	By GC-FID	Determination of GRO by Headspace in waters
TM256	The measurement of Electrical Conductivity and the Laboratory determination of pH Value of Natural, Treated and Wastewaters. HMSO, 1978. ISBN 011 751428 4.	Determination of pH in Water and Leachate using the GLpH pH Meter
TM304	HSE Contract research Report no 83/1996	Asbestos Quantification in Soil: Fibres identified by morphology only

NA = not applicable.
Chemical testing (unless subcontracted) performed at ALS Environmental Hawarden (Method codes TM) or ALS Environmental Aberdeen (Method codes S).

CERTIFICATE OF ANALYSIS

SDG: 180315-103 **Client Reference:** **Report Number:** 449692
Location: Llanwern **Order Number:** LLA413 **Superseded Report:** 449665

Test Completion Dates

Lab Sample No(s)	17215461	17215466	17215470	17215474	17215478	17215485	17215489	17215493
Customer Sample Ref.	W134-31	W134-32	W134-33	W134-34	W134-35	W134-36	W134-37	W134-38
AGS Ref.								
Depth	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
Alkali Metals by iCap-OES (Soil)	22-Mar-2018		22-Mar-2018		26-Mar-2018		22-Mar-2018	
Ammoniacal Nitrogen	23-Mar-2018	23-Mar-2018	23-Mar-2018	23-Mar-2018	23-Mar-2018	23-Mar-2018	23-Mar-2018	23-Mar-2018
Ammonium Soil by Titration	23-Mar-2018	23-Mar-2018	23-Mar-2018	23-Mar-2018	23-Mar-2018	23-Mar-2018	23-Mar-2018	23-Mar-2018
Anions by Kone (soil)	23-Mar-2018		23-Mar-2018		22-Mar-2018		22-Mar-2018	
Asbestos ID in Solid Samples	23-Mar-2018		23-Mar-2018		23-Mar-2018		23-Mar-2018	
Asbestos Quantification - Full	26-Mar-2018		26-Mar-2018				26-Mar-2018	
CEN 10:1 Leachate (1 Stage)	19-Mar-2018	19-Mar-2018	19-Mar-2018	16-Mar-2018	19-Mar-2018	19-Mar-2018	19-Mar-2018	19-Mar-2018
CEN Readings	21-Mar-2018	21-Mar-2018	21-Mar-2018	20-Mar-2018	21-Mar-2018	21-Mar-2018	21-Mar-2018	21-Mar-2018
Cyanide Comp/Free/Total/Thiocyanate	23-Mar-2018	23-Mar-2018	23-Mar-2018	22-Mar-2018	23-Mar-2018	23-Mar-2018	23-Mar-2018	23-Mar-2018
Dissolved Metals by ICP-MS	27-Mar-2018	27-Mar-2018	27-Mar-2018	27-Mar-2018	27-Mar-2018	27-Mar-2018	27-Mar-2018	27-Mar-2018
EPH CWG (Aliphatic) Aqueous GC (W)	24-Mar-2018	26-Mar-2018	26-Mar-2018	24-Mar-2018	26-Mar-2018	26-Mar-2018	26-Mar-2018	26-Mar-2018
EPH CWG (Aliphatic) GC (S)	23-Mar-2018	26-Mar-2018	26-Mar-2018	26-Mar-2018	26-Mar-2018	23-Mar-2018	23-Mar-2018	23-Mar-2018
EPH CWG (Aromatic) Aqueous GC (W)	24-Mar-2018	26-Mar-2018	26-Mar-2018	24-Mar-2018	26-Mar-2018	26-Mar-2018	26-Mar-2018	26-Mar-2018
EPH CWG (Aromatic) GC (S)	23-Mar-2018	26-Mar-2018	23-Mar-2018	26-Mar-2018	23-Mar-2018	23-Mar-2018	23-Mar-2018	23-Mar-2018
GRO by GC-FID (S)	23-Mar-2018	23-Mar-2018	26-Mar-2018	26-Mar-2018	26-Mar-2018	23-Mar-2018	26-Mar-2018	26-Mar-2018
GRO by GC-FID (W)	22-Mar-2018	23-Mar-2018	22-Mar-2018	21-Mar-2018	23-Mar-2018	23-Mar-2018	23-Mar-2018	23-Mar-2018
Mercury Dissolved	26-Mar-2018	26-Mar-2018	26-Mar-2018	26-Mar-2018	26-Mar-2018	26-Mar-2018	26-Mar-2018	26-Mar-2018
Metals by iCap-OES Dissolved (W)	23-Mar-2018	23-Mar-2018	23-Mar-2018	22-Mar-2018	23-Mar-2018	23-Mar-2018	23-Mar-2018	23-Mar-2018
Metals in solid samples by OES	26-Mar-2018	26-Mar-2018	26-Mar-2018	23-Mar-2018	26-Mar-2018	23-Mar-2018	27-Mar-2018	23-Mar-2018
PAH by GCMS	24-Mar-2018	24-Mar-2018	24-Mar-2018	24-Mar-2018	24-Mar-2018	24-Mar-2018	24-Mar-2018	24-Mar-2018
PAH in waters by GC-MS (diss.filt)	26-Mar-2018	26-Mar-2018	26-Mar-2018	22-Mar-2018	26-Mar-2018	26-Mar-2018	26-Mar-2018	26-Mar-2018
pH	18-Mar-2018	18-Mar-2018	18-Mar-2018	18-Mar-2018	18-Mar-2018	18-Mar-2018	18-Mar-2018	18-Mar-2018
pH Value of Filtered Water	22-Mar-2018	22-Mar-2018	22-Mar-2018	21-Mar-2018	22-Mar-2018	22-Mar-2018	22-Mar-2018	22-Mar-2018
Phenols by HPLC (S)	20-Mar-2018	20-Mar-2018	20-Mar-2018	20-Mar-2018	20-Mar-2018	20-Mar-2018	21-Mar-2018	21-Mar-2018
Sample description	16-Mar-2018	16-Mar-2018	16-Mar-2018	16-Mar-2018	16-Mar-2018	16-Mar-2018	16-Mar-2018	16-Mar-2018
Total Organic Carbon	21-Mar-2018	22-Mar-2018	21-Mar-2018	22-Mar-2018	22-Mar-2018	22-Mar-2018	22-Mar-2018	22-Mar-2018
Total Sulphate	23-Mar-2018		23-Mar-2018		23-Mar-2018		23-Mar-2018	
Total Sulphur	21-Mar-2018		21-Mar-2018		23-Mar-2018		23-Mar-2018	
TPH CWG (W)	24-Mar-2018	26-Mar-2018	26-Mar-2018	24-Mar-2018	26-Mar-2018	26-Mar-2018	26-Mar-2018	26-Mar-2018
TPH CWG GC (S)	23-Mar-2018	26-Mar-2018	26-Mar-2018	26-Mar-2018	26-Mar-2018	23-Mar-2018	26-Mar-2018	26-Mar-2018
VOC MS (W)	22-Mar-2018	22-Mar-2018	22-Mar-2018	22-Mar-2018	22-Mar-2018	22-Mar-2018	22-Mar-2018	22-Mar-2018

Appendix

General

1. Results are expressed on a dry weight basis (dried at 35ºC) for all soil analyses except for the following: NRA and CEN Leach tests, flash point LOI, pH, ammonium as NH4 by the BRE method, VOC TICs and SVOC TICs.

2. Samples will be run in duplicate upon request, but an additional charge may be incurred

3. If sufficient sample is received a sub sample will be retained free of charge for 30 days after analysis is completed (e-mailed) for all sample types unless the sample is destroyed on testing. The prepared soil sub sample that is analysed for asbestos will be retained for a period of 6 months after the analysis date. All bulk samples will be retained for a period of 6 months after the analysis date. All samples received and not scheduled will be disposed of one month after the date of receipt unless we are instructed to the contrary. Once the initial period has expired, a storage charge will be applied for each month or part thereof until the client cancels the request for sample storage. ALS reserve the right to charge for samples received and stored but not analysed.

4. With respect to turnaround, we will always endeavour to meet client requirements wherever possible, but turnaround times cannot be absolutely guaranteed due to so many variables beyond our control.

5. We take responsibility for any test performed by sub-contractors (marked with an asterisk). We endeavour to use UKAS/MCERTS Accredited Laboratories, who either complete a quality questionnaire or are audited by ourselves. For some determinands there are no UKAS/MCERTS Accredited Laboratories, in this instance a laboratory with a known track record will be utilised.

6. When requested, the individual sub sample scheduled will be analysed in house for the presence of asbestos fibres and asbestos containing material by our documented in house method TM048 based on HSG 248 (2005), which is accredited to ISO17025. If a specific asbestos fibre type is not found this will be reported as “Not detected”. If no asbestos fibre types are found all will be reported as “Not detected” and the sub sample analysed deemed to be clear of asbestos. If an asbestos fibre type is found it will be reported as detected (for each fibre type found). Testing can be carried out on asbestos positive samples, but, due to Health and Safety considerations, may be replaced by alternative tests or reported as No Determination Possible (NDP). The quantity of asbestos present is not determined unless specifically requested.

7. If no separate volatile sample is supplied by the client, or if a headspace or sediment is present in the volatile sample, the integrity of the data may be compromised. This will be flagged up as an invalid VOC on the test schedule and the result marked as deviating on the test certificate.

8. If appropriate preserved bottles are not received preservation will take place on receipt. However, the integrity of the data may be compromised.

9. NDP - No determination possible due to insufficient/unsuitable sample.

10. Metals in water are performed on a filtered sample, and therefore represent dissolved metals - total metals must be requested separately.

11. Results relate only to the items tested.

12. LoDs (Limit of Detection) for wet tests reported on a dry weight basis are not corrected for moisture content.

13. **Surrogate recoveries** - Surrogates are added to your sample to monitor recovery of the test requested. A % recovery is reported, results are not corrected for the recovery measured. Typical recoveries for organics tests are 70-130%, they are generally wider for volatiles analysis, 50-150%. Recoveries in soils are affected by organic rich or clay rich matrices. Waters can be affected by remediation fluids or high amounts of sediment. Test results are only ever reported if all of the associated quality checks pass; it is assumed that all recoveries outside of the values above are due to matrix affect.

14. **Product analyses** - Organic analyses on products can only be semi-quantitative due to the matrix effects and high dilution factors
employed.

15. Phenols monohydric by HPLC include phenol, cresols (2-Methylphenol, 3-Methylphenol and 4-Methylphenol) and Xylenols (2,3 Dimethylphenol, 2,4 Dimethylphenol, 2,5 Dimethylphenol, 2,6 Dimethylphenol, 3,4 Dimethyphenol, 3,5 Dimethylphenol).

16. Total of 5 speciated phenols by HPLC includes Phenol, 2,3,5-Trimethyl Phenol, 2-Isopropylphenol, Cresols and Xylenols (as detailed in 15).

17. Stones/debris are not routinely removed. We always endeavour to take a representative sub sample from the received sample.

18. In certain circumstances the method detection limit may be elevated due to the sample being outside the calibration range. Other factors that may contribute to this include possible interferences. In both cases the sample would be diluted which would cause the method detection limit to be raised.

19. Mercury results quoted on soils will not include volatile mercury as the analysis is performed on a dried and crushed sample.

20. For leachate preparations other than Zero Headspace Extraction (ZHE) volatile loss may occur.

21. For the BSEN 12457-3 two batch process to allow the cumulative release to be calculated, the volume of the leachate produced is measured and filtered for all tests. We therefore cannot carry out any unfiltered analysis. The tests affected include volatiles GCFID/GCMS and all subcontracted analysis.

22. We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample. Other coarse granular material such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

23. Analysis and identification of specific compounds using GCFID is by retention time only, and we routinely calibrate and quantify for benzene, toluene, ethylbenzenes and xylenes (BTEX). For total volatiles in the C5-C12 range, the total area of the chromatogram is integrated and expressed as ug/kg or ug/l. Although this analysis is commonly used for the quantification of gasoline range organics (GRO), the system will also detect other compounds such as chlorinated solvents, and this may lead to a falsely high result with respect to hydrocarbons only. It is not possible to specifically identify these non-hydrocarbons, as standards are not routinely run for any other compounds, and for more definitive identification, volatiles by GCMS should be utilised.

24. **Tentatively Identified Compounds (TICs)** are non-target peaks in VOC and SVOC analysis. All non-target peaks detected with a concentration above the LoD are subjecte to a mass spectral library search. Non-target peaks with a library search confidence of >75% are reported based on the best mass spectral library match. When a non-target peak with a library search confidence of <75% is detected it is reported as “mixed hydrocarbons”. Non-target compounds identified from the scan data are semi-quantified relative to one of the deuterated internal standards, under the same chromatographic conditions as the target compounds. This result is reported as a semi-quantitative value and reported as Tentatively Identified Compounds (TICs). TICs are outside the scope of UKAS accreditation and are not moisture corrected.

Sample Deviations

If a sample is classed as deviated then the associated results may be compromised.

1	**Container with Headspace provided for volatiles analysis**
2	**Incorrect container received**
3	**Deviation from method**
4	**Holding time exceeded before sample received**
5	**Samples exceeded holding time before presevation was performed**
§	**Sampled on date not provided**
♦	**Sample holding time exceeded in laboratory**
@	**Sample holding time exceeded due to sampled on date**
&	**Sample Holding Time exceeded - Late arrival of instructions.**

Asbestos

Identification of Asbestos in Bulk Materials & Soils

The results for identification of asbestos in bulk materials are obtained from supplied bulk materials which have been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

The results for identification of asbestos in soils are obtained from a homogenised sub sample which has been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

Asbestos Type	Common Name
Chrysotile	White Asbestos
Amosite	Brown Asbestos
Crocidolite	Blue Asbestos
Fibrous Actinolite	-
Fibrous Anthophyllite	-
Fibrous Tremolite	-

Visual Estimation Of Fibre Content

Estimation of fibre content is not permitted as part of our UKAS accredited test other than: - Trace - Where only one or two asbestos fibres were identified.

Further guidance on typical asbestos fibre content of manufactured products can be found in HSG 264.

The identification of asbestos containing materials and soils falls within our schedule of tests for which we hold UKAS accreditation, however opinions, interpretations and all other information contained in the report are outside the scope of UKAS accreditation.

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Final Report

Report No.:	21-24808-1
Initial Date of Issue:	27-Jul-2021
Client	Rodgers Leask Environmental
Client Address:	Office 225 2430/2440 Aztec West Almoundsbury Bristol BS32 4AQ
Contact(s):	Chris Wilson David McCarroll
Project	P18-669
Quotation No.:	Q21-24056
Order No.:	.
No. of Samples:	10
Turnaround (Wkdays):	5
Date Approved:	26-Jul-2021
Approved By:	
Details:	Glynn Harvey, Technical Manager

Date Received:	20-Jul-2021
Date Instructed:	20-Jul-2021
Results Due:	26-Jul-2021

Results - Soil

Project: P18-669

Client: Rodgers Leask Environmental		**Chemtest Job No.:**			21-24808	21-24808	21-24808	21-24808	21-24808	21-24808	21-24808	21-24808	21-24808
Quotation No.: Q21-24056		**Chemtest Sample ID.:**			1243529	1243530	1243531	1243532	1243533	1243534	1243535	1243536	1243537
Order No.: .		Client Sample Ref.:			AE30-2	AE30-1	AC31-1	AC31-2	AD31-1	AD34-1	AD31-2	AD36-1	AD36-2
		Sample Type:			SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
		Top Depth (m):			1.4	0.3	0.3	1.6	0.6	0.5	1.1	0.6	1.5
		Bottom Depth (m):			1.4	0.3	0.3	1.6	0.6	0.5	1.1	0.6	1.5
		Date Sampled:			16-Jul-2021	16-Jul-2021	16-Jul-2021	16-Jul-2021	16-Jul-2021	16-Jul-2021	16-Jul-2021	16-Jul-2021	16-Jul-2021
		Asbestos Lab:				DURHAM		DURHAM	DURHAM	DURHAM		DURHAM	
Determinand	**Accred.**	**SOP**	**Units**	**LOD**									
ACM Type	U	2192		N/A		-		-	-	-		-	
Asbestos Identification	U	2192		N/A		No Asbestos Detected		No Asbestos Detected	No Asbestos Detected	No Asbestos Detected		No Asbestos Detected	
Moisture	N	2030	%	0.020	2.2	2.8	1.4	5.4	8.1	5.5	7.5	5.5	8.2
Soil Colour	N	2040		N/A	Grey	Grey	Grey	Brown	Brown	Brown	Brown	Brown	Brown
Other Material	N	2040		N/A	None	Stones	Stones	Stones	Stones	Stones	Stones	Stones	Stones
Soil Texture	N	2040		N/A	concrete	concrete	concrete	Sand	Sand	Sand	Sand	Sand	Sand
pH	M	2010		4.0	> 12.0	12.0	11.1	10.8	11.7	10.4	10.1	9.4	8.4
Cyanide (Total)	M	2300	mg/kg	0.50	< 0.50	1.2	< 0.50	2.7	6.3	11	5.9	0.50	9.0
Ammoniacal Nitrogen	M	2425	mg/kg	0.50	0.68	< 0.50	< 0.50	< 0.50	< 0.50	3.8	1.1	1.2	1.9
Iron (Total)	N	2430	mg/kg	100	33000	26000	7200	10000	32000	16000	19000	23000	18000
Arsenic	M	2450	mg/kg	1.0	15	18	22	24	18	11	15	10	9.7
Cadmium	M	2450	mg/kg	0.10	< 0.10	0.41	0.18	0.41	0.42	0.50	0.36	0.26	0.25
Chromium	M	2450	mg/kg	1.0	470	320	62	120	500	78	85	20	18
Manganese	M	2450	mg/kg	5.0	27000	19000	5000	7900	24000	4200	4800	1300	430
Copper	M	2450	mg/kg	0.50	440	210	47	73	420	220	73	140	280
Mercury	M	2450	mg/kg	0.10	0.43	0.27	< 0.10	0.15	0.38	0.15	0.34	0.17	0.27
Nickel	M	2450	mg/kg	0.50	15	13	5.7	16	31	23	29	29	30
Lead	M	2450	mg/kg	0.50	35	33	8.9	47	75	54	99	38	59
Selenium	M	2450	mg/kg	0.20	< 0.20	< 0.20	< 0.20	1.1	< 0.20	0.95	1.5	0.90	1.1
Vanadium	U	2450	mg/kg	5.0	500	990	160	290	350	71	130	30	26
Zinc	M	2450	mg/kg	0.50	37	67	37	280	120	130	200	73	76
Organic Matter	M	2625	%	0.40	< 0.40	0.55	< 0.40	1.4	1.4	4.3	3.5	6.0	4.8
Aliphatic TPH >C5-C6	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C6-C8	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C8-C10	M	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C10-C12	M	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C12-C16	M	2680	mg/kg	1.0	150	< 1.0	< 1.0	< 1.0	170	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C16-C21	M	2680	mg/kg	1.0	400	< 1.0	< 1.0	< 1.0	330	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C21-C35	M	2680	mg/kg	1.0	45	< 1.0	< 1.0	< 1.0	58	24	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C35-C44	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Total Aliphatic Hydrocarbons	N	2680	mg/kg	5.0	590	< 5.0	< 5.0	< 5.0	570	24	< 5.0	< 5.0	< 5.0
Aromatic TPH >C5-C7	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	49	50	< 1.0	< 1.0
Aromatic TPH >C7-C8	N	2680	mg/kg	1.0	41	< 1.0	< 1.0	< 1.0	< 1.0	44	45	< 1.0	< 1.0
Aromatic TPH >C8-C10	M	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	43	44	< 1.0	< 1.0
Aromatic TPH >C10-C12	M	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	47	48	< 1.0	< 1.0
Aromatic TPH >C12-C16	M	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	26	26	< 1.0	< 1.0

Results - Soil

Project: P18-669

Client: Rodgers Leask Environmental		**Chemtest Job No.:**			21-24808	21-24808	21-24808	21-24808	21-24808	21-24808	21-24808	21-24808	21-24808
Quotation No.: Q21-24056		**Chemtest Sample ID.:**			1243529	1243530	1243531	1243532	1243533	1243534	1243535	1243536	1243537
Order No.: .		Client Sample Ref.:			AE30-2	AE30-1	AC31-1	AC31-2	AD31-1	AD34-1	AD31-2	AD36-1	AD36-2
		Sample Type:			SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
		Top Depth (m):			1.4	0.3	0.3	1.6	0.6	0.5	1.1	0.6	1.5
		Bottom Depth (m):			1.4	0.3	0.3	1.6	0.6	0.5	1.1	0.6	1.5
		Date Sampled:			16-Jul-2021	16-Jul-2021	16-Jul-2021	16-Jul-2021	16-Jul-2021	16-Jul-2021	16-Jul-2021	16-Jul-2021	16-Jul-2021
		Asbestos Lab:				DURHAM		DURHAM	DURHAM	DURHAM		DURHAM	
Determinand	**Accred.**	**SOP**	**Units**	**LOD**									
Aromatic TPH >C16-C21	U	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	23	24	< 1.0	< 1.0
Aromatic TPH >C21-C35	M	2680	mg/kg	1.0	19	< 1.0	< 1.0	< 1.0	< 1.0	48	49	< 1.0	< 1.0
Aromatic TPH >C35-C44	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Total Aromatic Hydrocarbons	N	2680	mg/kg	5.0	60	< 5.0	< 5.0	< 5.0	< 5.0	280	290	< 5.0	< 5.0
Total Petroleum Hydrocarbons	N	2680	mg/kg	10.0	650	< 10	< 10	< 10	570	300	290	< 10	< 10
Benzene	M	2760	µg/kg	1.0	11	1.5	< 1.0	< 1.0	< 1.0	72	31	< 1.0	10
Toluene	M	2760	µg/kg	1.0	6.2	1.3	< 1.0	< 1.0	< 1.0	31	11	< 1.0	< 1.0
Ethylbenzene	M	2760	µg/kg	1.0	1.0	< 1.0	< 1.0	< 1.0	< 1.0	9.0	3.1	< 1.0	< 1.0
m & p-Xylene	M	2760	µg/kg	1.0	< 1.0	4.1	5.6	< 1.0	< 1.0	130	23	< 1.0	< 1.0
o-Xylene	M	2760	µg/kg	1.0	1.9	< 1.0	2.0	< 1.0	< 1.0	33	6.1	< 1.0	< 1.0
Methyl Tert-Butyl Ether	M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Naphthalene	M	2800	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Acenaphthylene	N	2800	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Acenaphthene	M	2800	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Fluorene	M	2800	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Phenanthrene	M	2800	mg/kg	0.10	0.58	< 0.10	< 0.10	< 0.10	0.56	< 0.10	< 0.10	< 0.10	< 0.10
Anthracene	M	2800	mg/kg	0.10	0.19	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Fluoranthene	M	2800	mg/kg	0.10	1.8	0.34	< 0.10	< 0.10	1.1	0.22	0.16	0.10	0.11
Pyrene	M	2800	mg/kg	0.10	1.7	0.35	< 0.10	< 0.10	1.1	0.17	0.15	< 0.10	0.14
Benzo[a]anthracene	M	2800	mg/kg	0.10	0.88	0.22	< 0.10	< 0.10	0.62	0.12	< 0.10	< 0.10	< 0.10
Chrysene	M	2800	mg/kg	0.10	0.78	0.40	< 0.10	< 0.10	0.82	0.20	< 0.10	< 0.10	0.25
Benzo[b]fluoranthene	M	2800	mg/kg	0.10	1.4	0.40	< 0.10	< 0.10	0.97	< 0.10	< 0.10	< 0.10	< 0.10
Benzo[k]fluoranthene	M	2800	mg/kg	0.10	0.51	0.19	< 0.10	< 0.10	0.39	< 0.10	< 0.10	< 0.10	< 0.10
Benzo[a]pyrene	M	2800	mg/kg	0.10	1.1	0.30	< 0.10	< 0.10	0.71	< 0.10	< 0.10	< 0.10	< 0.10
Indeno(1,2,3-c,d)Pyrene	M	2800	mg/kg	0.10	0.77	< 0.10	< 0.10	< 0.10	0.58	< 0.10	< 0.10	< 0.10	< 0.10
Dibenz(a,h)Anthracene	N	2800	mg/kg	0.10	0.15	< 0.10	< 0.10	< 0.10	0.14	< 0.10	< 0.10	< 0.10	< 0.10
Benzo[g,h,i]perylene	M	2800	mg/kg	0.10	0.72	< 0.10	< 0.10	< 0.10	0.61	< 0.10	< 0.10	< 0.10	< 0.10
Total Of 16 PAH's	N	2800	mg/kg	2.0	11	2.2	< 2.0	< 2.0	7.6	< 2.0	< 2.0	< 2.0	< 2.0
Resorcinol	M	2920	mg/kg	0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020
Phenol	M	2920	mg/kg	0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020
Cresols	M	2920	mg/kg	0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	0.088	< 0.020	< 0.020	< 0.020
Xylenols	M	2920	mg/kg	0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	0.46	< 0.020	< 0.020	< 0.020
1-Naphthol	N	2920	mg/kg	0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020
Trimethylphenols	M	2920	mg/kg	0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020
Total Phenols	M	2920	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	0.54	< 0.10	< 0.10	< 0.10

Results - Water

Project: P18-669

Client: Rodgers Leask Environmental			**Chemtest Job No.:**		21-24808
Quotation No.: Q21-24056			**Chemtest Sample ID.:**		1243538
Order No.: .			Client Sample Ref.:		D2-S
			Sample Type:		WATER
			Date Sampled:		19-Jul-2021
Determinand	**Accred.**	**SOP**	**Units**	**LOD**	
pH	U	1010		N/A	8.8
Electrical Conductivity	U	1020	µS/cm	1.0	730
Suspended Solids At 105C	U	1030	mg/l	5.0	40
Total Dissolved Solids	N	1020	mg/l	1.0	470
Turbidity	N	1060	NTU	1.0	24
Biochemical Oxygen Demand	N	1090	mg O2/l	4.0	< 4.0
Chemical Oxygen Demand	U	1100	mg O2/l	10	19
Dissolved Oxygen	N	1150	mg O2/l	0.50	8.3
Redox Potential	N	1170	mV	N/A	15
Chloride	U	1220	mg/l	1.0	61
Fluoride	U	1220	mg/l	0.050	0.56
Ammoniacal Nitrogen	U	1220	mg/l	0.050	0.54
Phosphorus (Total)	N	1220	mg/l	0.020	0.023
Phosphate	U	1220	mg/l	0.200	< 0.20
Phosphorus (Dissolved)	U	1220	mg/l	0.020	0.023
Sulphur	N	1220	mg/l	1.0	40
Sulphate	U	1220	mg/l	1.0	120
Cyanide (Total)	U	1300	mg/l	0.050	< 0.050
Cyanide (Free)	U	1300	mg/l	0.050	< 0.050
Thiocyanate	U	1300	mg/l	0.50	< 0.50
Cyanide (Complex)	U	1300	mg/l	0.050	< 0.050
Sulphide	U	1325	mg/l	0.050	< 0.050
Calcium	U	1455	mg/l	2.00	49
Magnesium	U	1455	mg/l	0.20	11
Total Calcium	N	1455	mg/l	5.0	48
Total Magnesium	N	1455	mg/l	0.50	11
Total Hardness as CaCO3	U	1270	mg/l	15	170
Arsenic (Dissolved)	U	1455	µg/l	0.20	3.7
Boron (Dissolved)	U	1455	µg/l	10.0	140
Barium (Dissolved)	U	1455	µg/l	5.00	61
Beryllium (Dissolved)	U	1455	µg/l	1.00	< 1.0
Cadmium (Dissolved)	U	1455	µg/l	0.11	< 0.11
Chromium (Dissolved)	U	1455	µg/l	0.50	0.70
Copper (Dissolved)	U	1455	µg/l	0.50	2.1
Iron (Dissolved)	N	1455	µg/l	5.0	67
Mercury (Dissolved)	U	1455	µg/l	0.05	< 0.05
Manganese (Dissolved)	U	1455	µg/l	0.50	29
Nickel (Dissolved)	U	1455	µg/l	0.50	2.0
Lead (Dissolved)	U	1455	µg/l	0.50	< 0.50
Antimony (Dissolved)	U	1455	µg/l	0.50	< 0.50

Results - Water

Project: P18-669

Client: Rodgers Leask Environmental			**Chemtest Job No.:**		21-24808
Quotation No.: Q21-24056			**Chemtest Sample ID.:**		1243538
Order No.: .			Client Sample Ref.:		D2-S
			Sample Type:		WATER
			Date Sampled:		19-Jul-2021
Determinand	**Accred.**	**SOP**	**Units**	**LOD**	
Selenium (Dissolved)	U	1455	µg/l	0.50	< 0.50
Vanadium (Dissolved)	U	1455	µg/l	0.50	8.1
Zinc (Dissolved)	U	1455	µg/l	2.5	82
Arsenic (Total)	N	1455	µg/l	0.20	4.3
Boron (Total)	N	1455	µg/l	10.0	180
Barium (Total)	N	1455	µg/l	5.00	59
Beryllium (Total)	N	1455	µg/l	1.00	< 1.0
Cadmium (Total)	N	1455	µg/l	0.11	< 0.11
Chromium (Total)	N	1455	µg/l	0.50	< 0.50
Copper (Total)	N	1455	µg/l	0.50	2.4
Iron (Total)	N	1455	µg/l	5.0	61
Mercury (Total)	N	1455	µg/l	0.05	< 0.05
Manganese (Total)	N	1455	µg/l	0.50	30
Nickel (Total)	N	1455	µg/l	0.50	2.2
Lead (Total)	N	1455	µg/l	0.50	< 0.50
Antimony (Total)	N	1455	µg/l	0.50	< 0.50
Selenium (Total)	N	1455	µg/l	0.50	< 0.50
Vanadium (Total)	N	1455	µg/l	0.50	8.2
Zinc (Total)	N	1455	µg/l	2.5	83
Chromium (Hexavalent)	U	1490	µg/l	20	< 20
Dissolved Organic Carbon	U	1610	mg/l	2.0	29
Total Inorganic Carbon	N	1220	mg/l	2.5	31
Total Organic Carbon	U	1610	mg/l	2.0	31
Aliphatic TPH >C5-C6	N	1675	µg/l	0.10	< 0.10
Aliphatic TPH >C6-C8	N	1675	µg/l	0.10	< 0.10
Aliphatic TPH >C8-C10	N	1675	µg/l	0.10	< 0.10
Aliphatic TPH >C10-C12	N	1675	µg/l	0.10	< 0.10
Aliphatic TPH >C12-C16	N	1675	µg/l	0.10	< 0.10
Aliphatic TPH >C16-C21	N	1675	µg/l	0.10	< 0.10
Aliphatic TPH >C21-C35	N	1675	µg/l	0.10	< 0.10
Aliphatic TPH >C35-C44	N	1675	µg/l	0.10	< 0.10
Total Aliphatic Hydrocarbons	N	1675	µg/l	5.0	< 5.0
Aromatic TPH >C5-C7	N	1675	µg/l	0.10	< 0.10
Aromatic TPH >C7-C8	N	1675	µg/l	0.10	< 0.10
Aromatic TPH >C8-C10	N	1675	µg/l	0.10	< 0.10
Aromatic TPH >C10-C12	N	1675	µg/l	0.10	< 0.10
Aromatic TPH >C12-C16	N	1675	µg/l	0.10	< 0.10
Aromatic TPH >C16-C21	N	1675	µg/l	0.10	< 0.10
Aromatic TPH >C21-C35	N	1675	µg/l	0.10	< 0.10
Aromatic TPH >C35-C44	N	1675	µg/l	0.10	< 0.10

Results - Water

Project: P18-669

Client: Rodgers Leask Environmental			**Chemtest Job No.:**		21-24808
Quotation No.: Q21-24056			**Chemtest Sample ID.:**		1243538
Order No.: .			Client Sample Ref.:		D2-S
			Sample Type:		WATER
			Date Sampled:		19-Jul-2021
Determinand	**Accred.**	**SOP**	**Units**	**LOD**	
Total Aromatic Hydrocarbons	N	1675	µg/l	5.0	< 5.0
Total Petroleum Hydrocarbons	N	1675	µg/l	10	< 10
Dichlorodifluoromethane	U	1760	µg/l	1.0	< 1.0
Chloromethane	U	1760	µg/l	1.0	< 1.0
Vinyl Chloride	N	1760	µg/l	1.0	< 1.0
Bromomethane	U	1760	µg/l	5	< 5
Chloroethane	U	1760	µg/l	2.0	< 2.0
Trichlorofluoromethane	U	1760	µg/l	1.0	< 1.0
1,1-Dichloroethene	U	1760	µg/l	1.0	< 1.0
Trans 1,2-Dichloroethene	U	1760	µg/l	1.0	< 1.0
1,1-Dichloroethane	U	1760	µg/l	1.0	< 1.0
cis 1,2-Dichloroethene	U	1760	µg/l	1.0	< 1.0
Bromochloromethane	U	1760	µg/l	5	< 5
Trichloromethane	U	1760	µg/l	1.0	< 1.0
1,1,1-Trichloroethane	U	1760	µg/l	1.0	< 1.0
Tetrachloromethane	U	1760	µg/l	1.0	< 1.0
1,1-Dichloropropene	U	1760	µg/l	1.0	< 1.0
Benzene	U	1760	µg/l	1.0	< 1.0
1,2-Dichloroethane	U	1760	µg/l	2.0	< 2.0
Trichloroethene	N	1760	µg/l	1.0	< 1.0
1,2-Dichloropropane	U	1760	µg/l	1.0	< 1.0
Dibromomethane	U	1760	µg/l	10	< 10
Bromodichloromethane	U	1760	µg/l	5	< 5
cis-1,3-Dichloropropene	N	1760	µg/l	10	< 10
Toluene	U	1760	µg/l	1.0	< 1.0
Trans-1,3-Dichloropropene	N	1760	µg/l	10	< 10
1,1,2-Trichloroethane	U	1760	µg/l	10	< 10
Tetrachloroethene	U	1760	µg/l	1.0	< 1.0
1,3-Dichloropropane	U	1760	µg/l	2.0	< 2.0
Dibromochloromethane	U	1760	µg/l	10	< 10
1,2-Dibromoethane	U	1760	µg/l	5	< 5
Chlorobenzene	N	1760	µg/l	1.0	< 1.0
1,1,1,2-Tetrachloroethane	U	1760	µg/l	2.0	< 2.0
Ethylbenzene	U	1760	µg/l	1.0	< 1.0
m & p-Xylene	U	1760	µg/l	1.0	< 1.0
o-Xylene	U	1760	µg/l	1.0	< 1.0
Styrene	U	1760	µg/l	1.0	< 1.0
Tribromomethane	U	1760	µg/l	1.0	< 1.0
Isopropylbenzene	U	1760	µg/l	1.0	< 1.0
Bromobenzene	U	1760	µg/l	1.0	< 1.0

Results - Water

Project: P18-669

Client: Rodgers Leask Environmental			**Chemtest Job No.:**		21-24808
Quotation No.: Q21-24056			**Chemtest Sample ID.:**		1243538
Order No.: .			Client Sample Ref.:		D2-S
			Sample Type:		WATER
			Date Sampled:		19-Jul-2021
Determinand	**Accred.**	**SOP**	**Units**	**LOD**	
1,2,3-Trichloropropane	N	1760	µg/l	50	< 50
N-Propylbenzene	U	1760	µg/l	1.0	< 1.0
2-Chlorotoluene	U	1760	µg/l	1.0	< 1.0
1,3,5-Trimethylbenzene	U	1760	µg/l	1.0	< 1.0
4-Chlorotoluene	U	1760	µg/l	1.0	< 1.0
Tert-Butylbenzene	U	1760	µg/l	1.0	< 1.0
1,2,4-Trimethylbenzene	U	1760	µg/l	1.0	< 1.0
Sec-Butylbenzene	U	1760	µg/l	1.0	< 1.0
1,3-Dichlorobenzene	N	1760	µg/l	1.0	< 1.0
4-Isopropyltoluene	U	1760	µg/l	1.0	< 1.0
1,4-Dichlorobenzene	U	1760	µg/l	1.0	< 1.0
N-Butylbenzene	U	1760	µg/l	1.0	< 1.0
1,2-Dichlorobenzene	U	1760	µg/l	1.0	< 1.0
1,2-Dibromo-3-Chloropropane	U	1760	µg/l	50	< 50
1,2,4-Trichlorobenzene	U	1760	µg/l	1.0	< 1.0
Hexachlorobutadiene	U	1760	µg/l	1.0	< 1.0
1,2,3-Trichlorobenzene	U	1760	µg/l	2.0	< 2.0
Methyl Tert-Butyl Ether	N	1760	µg/l	1.0	< 1.0
N-Nitrosodimethylamine	N	1790	µg/l	0.50	< 0.50
Phenol	N	1790	µg/l	0.50	< 0.50
2-Chlorophenol	N	1790	µg/l	0.50	< 0.50
Bis-(2-Chloroethyl)Ether	N	1790	µg/l	0.50	< 0.50
1,3-Dichlorobenzene	N	1790	µg/l	0.50	< 0.50
1,4-Dichlorobenzene	N	1790	µg/l	0.50	< 0.50
1,2-Dichlorobenzene	N	1790	µg/l	0.50	< 0.50
2-Methylphenol (o-Cresol)	N	1790	µg/l	0.50	< 0.50
Bis(2-Chloroisopropyl)Ether	N	1790	µg/l	0.50	< 0.50
Hexachloroethane	N	1790	µg/l	0.50	< 0.50
N-Nitrosodi-n-propylamine	N	1790	µg/l	0.50	< 0.50
4-Methylphenol	N	1790	µg/l	0.50	< 0.50
Nitrobenzene	N	1790	µg/l	0.50	< 0.50
Isophorone	N	1790	µg/l	0.50	< 0.50
2-Nitrophenol	N	1790	µg/l	0.50	< 0.50
2,4-Dimethylphenol	N	1790	µg/l	0.50	< 0.50
Bis(2-Chloroethoxy)Methane	N	1790	µg/l	0.50	< 0.50
2,4-Dichlorophenol	N	1790	µg/l	0.50	< 0.50
1,2,4-Trichlorobenzene	N	1790	µg/l	0.50	< 0.50
Naphthalene	N	1790	µg/l	0.50	< 0.50
4-Chloroaniline	N	1790	µg/l	0.50	< 0.50
Hexachlorobutadiene	N	1790	µg/l	0.50	< 0.50

Results - Water

Project: P18-669

Client: Rodgers Leask Environmental			**Chemtest Job No.:**		21-24808
Quotation No.: Q21-24056			**Chemtest Sample ID.:**		1243538
Order No.: .			Client Sample Ref.:		D2-S
			Sample Type:		WATER
			Date Sampled:		19-Jul-2021
Determinand	**Accred.**	**SOP**	**Units**	**LOD**	
4-Chloro-3-Methylphenol	N	1790	µg/l	0.50	< 0.50
2-Methylnaphthalene	N	1790	µg/l	0.50	< 0.50
Hexachlorocyclopentadiene	N	1790	µg/l	0.50	< 0.50
2,4,6-Trichlorophenol	N	1790	µg/l	0.50	< 0.50
2,4,5-Trichlorophenol	N	1790	µg/l	0.50	< 0.50
2-Chloronaphthalene	N	1790	µg/l	0.50	< 0.50
2-Nitroaniline	N	1790	µg/l	0.50	< 0.50
Acenaphthylene	N	1790	µg/l	0.50	< 0.50
Dimethylphthalate	N	1790	µg/l	0.50	< 0.50
2,6-Dinitrotoluene	N	1790	µg/l	0.50	< 0.50
Acenaphthene	N	1790	µg/l	0.50	< 0.50
3-Nitroaniline	N	1790	µg/l	0.50	< 0.50
Dibenzofuran	N	1790	µg/l	0.50	< 0.50
4-Chlorophenylphenylether	N	1790	µg/l	0.50	< 0.50
2,4-Dinitrotoluene	N	1790	µg/l	0.50	< 0.50
Fluorene	N	1790	µg/l	0.50	< 0.50
Diethyl Phthalate	N	1790	µg/l	0.50	< 0.50
4-Nitroaniline	N	1790	µg/l	0.50	< 0.50
2-Methyl-4,6-Dinitrophenol	N	1790	µg/l	0.50	< 0.50
Azobenzene	N	1790	µg/l	0.50	< 0.50
4-Bromophenylphenyl Ether	N	1790	µg/l	0.50	< 0.50
Hexachlorobenzene	N	1790	µg/l	0.50	< 0.50
Pentachlorophenol	N	1790	µg/l	0.50	< 0.50
Phenanthrene	N	1790	µg/l	0.50	< 0.50
Anthracene	N	1790	µg/l	0.50	< 0.50
Carbazole	N	1790	µg/l	0.50	< 0.50
Di-N-Butyl Phthalate	N	1790	µg/l	0.50	< 0.50
Fluoranthene	N	1790	µg/l	0.50	< 0.50
Pyrene	N	1790	µg/l	0.50	< 0.50
Butylbenzyl Phthalate	N	1790	µg/l	0.50	< 0.50
Benzo[a]anthracene	N	1790	µg/l	0.50	< 0.50
Chrysene	N	1790	µg/l	0.50	< 0.50
Bis(2-Ethylhexyl)Phthalate	N	1790	µg/l	0.50	< 0.50
Di-N-Octyl Phthalate	N	1790	µg/l	0.50	< 0.50
Benzo[b]fluoranthene	N	1790	µg/l	0.50	< 0.50
Benzo[k]fluoranthene	N	1790	µg/l	0.50	< 0.50
Benzo[a]pyrene	N	1790	µg/l	0.50	< 0.50
Indeno(1,2,3-c,d)Pyrene	N	1790	µg/l	0.50	< 0.50
Dibenz(a,h)Anthracene	N	1790	µg/l	0.50	< 0.50
Benzo[g,h,i]perylene	N	1790	µg/l	0.50	< 0.50

Results - Water

Project: P18-669

Client: Rodgers Leask Environmental			**Chemtest Job No.:**		21-24808
Quotation No.: Q21-24056			**Chemtest Sample ID.:**		1243538
Order No.: .			Client Sample Ref.:		D2-S
			Sample Type:		WATER
			Date Sampled:		19-Jul-2021
Determinand	**Accred.**	**SOP**	**Units**	**LOD**	
4-Nitrophenol	N	1790	µg/l	0.50	< 0.50
Naphthalene	U	1800	µg/l	0.10	< 0.10
Acenaphthylene	U	1800	µg/l	0.10	< 0.10
Acenaphthene	U	1800	µg/l	0.10	< 0.10
Fluorene	U	1800	µg/l	0.10	< 0.10
Phenanthrene	U	1800	µg/l	0.10	< 0.10
Anthracene	U	1800	µg/l	0.10	< 0.10
Fluoranthene	U	1800	µg/l	0.10	< 0.10
Pyrene	U	1800	µg/l	0.10	< 0.10
Benzo[a]anthracene	U	1800	µg/l	0.10	< 0.10
Chrysene	U	1800	µg/l	0.10	< 0.10
Benzo[b]fluoranthene	U	1800	µg/l	0.10	< 0.10
Benzo[k]fluoranthene	U	1800	µg/l	0.10	< 0.10
Benzo[a]pyrene	U	1800	µg/l	0.10	< 0.10
Indeno(1,2,3-c,d)Pyrene	U	1800	µg/l	0.10	< 0.10
Dibenz(a,h)Anthracene	U	1800	µg/l	0.10	< 0.10
Benzo[g,h,i]perylene	U	1800	µg/l	0.10	< 0.10
Total Of 16 PAH's	U	1800	µg/l	2.0	< 2.0
Total Phenols	U	1920	mg/l	0.030	< 0.030

Test Methods

SOP	Title	Parameters included	Method summary
1010	pH Value of Waters	pH	pH Meter
1020	Electrical Conductivity and Total Dissolved Solids (TDS) in Waters	Electrical Conductivity and Total Dissolved Solids (TDS) in Waters	Conductivity Meter
1030	Total Suspended Solids	Total suspended solids	Filtration of a mixed sample through a standard glass fibre filter and determination of the mass of residue retained dried at 105°C.
1060	Turbidity	Turbidity	Spetctrophotometry
1090	Biochemical Oxygen Demand	Biochemical Oxygen demand (BOD)	Colorimetric determination of dissolved oxygen in seeded sample after 5 days incubation at 20°C.
1100	Chemical Oxygen Demand	Chemical Oxygen demand (COD)	Dichromate oxidation of organic matter in sample followed by colorimetric determination of residual Cr[VI].
1150	Dissolved Oxygen	Dissolved Oxygen (DO)	Electrometric determination (on site preferred), using oxygen sensitive membrane electrode.
1170	Redox Potential	Redox Potential	Meter
1220	Anions, Alkalinity & Ammonium in Waters	Fluoride; Chloride; Nitrite; Nitrate; Total; Oxidisable Nitrogen (TON); Sulfate; Phosphate; Alkalinity; Ammonium	Automated colorimetric analysis using 'Aquakem 600' Discrete Analyser.
1270	Total Hardness of Waters	Total hardness	Calculation applied to calcium and magnesium results, expressed as mg l-1 CaCO3 equivalent.
1300	Cyanides & Thiocyanate in Waters	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Continuous Flow Analysis.
1325	Sulphide in Waters	Sulphides	Automated colorimetric analysis by 'Aquakem 600' Discrete Analyser using N,N–dimethyl-pphenylenediamine.
1455	Metals in Waters by ICP-MS	Metals, including: Antimony; Arsenic; Barium; Beryllium; Boron; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Tin; Vanadium; Zinc	Filtration of samples followed by direct determination by inductively coupled plasma mass spectrometry (ICP-MS).
1490	Hexavalent Chromium in Waters	Chromium [VI]	Automated colorimetric analysis by 'Aquakem 600' Discrete Analyser using 1,5-diphenylcarbazide.
1610	Total/Dissolved Organic Carbon in Waters	Organic Carbon	TOC Analyser using Catalytic Oxidation
1675	TPH Aliphatic/Aromatic split in Waters by GC-FID(cf. Texas Method 1006 / TPH CWG)	Aliphatics: >C5–C6, >C6–C8, >C8– C10, >C10–C12, >C12–C16, >C16–C21, >C21–C35, >C35– C44Aromatics: >C5–C7, >C7–C8, >C8– C10, >C10–C12, >C12–C16, >C16– C21, >C21– C35, >C35– C44	Pentane extraction / GCxGC FID detection
1760	Volatile Organic Compounds (VOCs) in Waters by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics. (cf. USEPA Method 8260)	Automated headspace gas chromatographic (GC) analysis of water samples with mass spectrometric (MS) detection of volatile organic compounds.
1790	Semi-Volatile Organic Compounds (SVOCs) in Waters by GC-MS	Semi-volatile organic compounds	Solvent extraction / GCMS detection
1800	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Waters by GC-MS	Acenaphthene; Acenaphthylene; Anthracene; Benzo[a]Anthracene; Benzo[a]Pyrene; Benzo[b]Fluoranthene; Benzo[ghi]Perylene; Benzo[k]Fluoranthene; Chrysene; Dibenz[ah]Anthracene; Fluoranthene; Fluorene; Indeno[123cd]Pyrene; Naphthalene; Phenanthrene; Pyrene	Pentane extraction / GCMS detection
1920	Phenols in Waters by HPLC	Phenolic compounds including: Phenol, Cresols, Xylenols, Trimethylphenols Note: Chlorophenols are excluded.	Determination by High Performance Liquid Chromatography (HPLC) using electrochemical detection.

Test Methods

SOP	Title	Parameters included	Method summary
2010	pH Value of Soils	pH	pH Meter
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <37°C.
2040	Soil Description(Requirement of MCERTS)	Soil description	As received soil is described based upon BS5930
2192	Asbestos	Asbestos	Polarised light microscopy / Gravimetry
2300	Cyanides & Thiocyanate in Soils	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Allkaline extraction followed by colorimetric determination using Automated Flow Injection Analyser.
2425	Extractable Ammonium in soils	Ammonium	Extraction with potassium chloride solution / analysis by 'Aquakem 600' Discrete Analyser using sodium salicylate and sodium dichloroisocyanurate.
2430	Total Sulphate in soils	Total Sulphate	Acid digestion followed by determination of sulphate in extract by ICP-OES.
2450	Acid Soluble Metals in Soils	Metals, including: Arsenic; Barium; Beryllium; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Vanadium; Zinc	Acid digestion followed by determination of metals in extract by ICP-MS.
2625	Total Organic Carbon in Soils	Total organic Carbon (TOC)	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.
2680	TPH A/A Split	Aliphatics: >C5–C6, >C6–C8,>C8–C10, >C10–C12, >C12–C16, >C16–C21, >C21–C35, >C35– C44Aromatics: >C5–C7, >C7–C8, >C8– C10, >C10–C12, >C12–C16, >C16– C21, >C21– C35, >C35– C44	Dichloromethane extraction / GCxGC FID detection
2760	Volatile Organic Compounds (VOCs) in Soils by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics.(cf. USEPA Method 8260)*please refer to UKAS schedule	Automated headspace gas chromatographic (GC) analysis of a soil sample, as received, with mass spectrometric (MS) detection of volatile organic compounds.
2800	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Soil by GC-MS	Acenaphthene*; Acenaphthylene; Anthracene*; Benzo[a]Anthracene*; Benzo[a]Pyrene*; Benzo[b]Fluoranthene*; Benzo[ghi]Perylene*; Benzo[k]Fluoranthene; Chrysene*; Dibenz[ah]Anthracene; Fluoranthene*; Fluorene*; Indeno[123cd]Pyrene*; Naphthalene*; Phenanthrene*; Pyrene*	Dichloromethane extraction / GC-MS
2920	Phenols in Soils by HPLC	Phenolic compounds including Resorcinol, Phenol, Methylphenols, Dimethylphenols, 1-Naphthol and TrimethylphenolsNote: chlorophenols are excluded.	60:40 methanol/water mixture extraction, followed by HPLC determination using electrochemical detection.

Report Information

Key

U	UKAS accredited
M	MCERTS and UKAS accredited
N	Unaccredited
S	This analysis has been subcontracted to a UKAS accredited laboratory that is accredited for this analysis
SN	This analysis has been subcontracted to a UKAS accredited laboratory that is not accredited for this analysis
T	This analysis has been subcontracted to an unaccredited laboratory
I/S	Insufficient Sample
U/S	Unsuitable Sample
N/E	not evaluated
<	"less than"
>	"greater than"
SOP	Standard operating procedure
LOD	Limit of detection

Comments or interpretations are beyond the scope of UKAS accreditation
The results relate only to the items tested
Uncertainty of measurement for the determinands tested are available upon request
None of the results in this report have been recovery corrected
All results are expressed on a dry weight basis

The following tests were analysed on samples as received and the results subsequently corrected to a dry weight basis TPH, BTEX, VOCs, SVOCs, PCBs, Phenols

For all other tests the samples were dried at < 37°C prior to analysis
All Asbestos testing is performed at the indicated laboratory
Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1

Sample Deviation Codes

A - Date of sampling not supplied
B - Sample age exceeds stability time (sampling to extraction)
C - Sample not received in appropriate containers
D - Broken Container
E - Insufficient Sample (Applies to LOI in Trommel Fines Only)

Sample Retention and Disposal

All soil samples will be retained for a period of 30 days from the date of receipt
All water samples will be retained for 14 days from the date of receipt
Charges may apply to extended sample storage

If you require extended retention of samples, please email your requirements to:
customerservices@chemtest.com

eurofins | Chemtest
Eurofins Chemtest Ltd
Depot Road
Newmarket
CB8 0AL
Tel: 01638 606070
Email: info@chemtest.com

Final Report

Report No.:	21-24808-1
Initial Date of Issue:	27-Jul-2021
Client	Rodgers Leask Environmental
Client Address:	Office 225 2430/2440 Aztec West Almoundsbury Bristol BS32 4AQ
Contact(s):	Chris Wilson David McCarroll
Project	P18-669
Quotation No.:	Q21-24056
Order No.:	.
No. of Samples:	10
Turnaround (Wkdays):	5
Date Approved:	26-Jul-2021
Approved By:	
Details:	Glynn Harvey, Technical Manager

Date Received:	20-Jul-2021
Date Instructed:	20-Jul-2021
Results Due:	26-Jul-2021

Results - Soil

Project: P18-669

Client: Rodgers Leask Environmental		**Chemtest Job No.:**			21-24808	21-24808	21-24808	21-24808	21-24808	21-24808	21-24808	21-24808	21-24808
Quotation No.: Q21-24056		**Chemtest Sample ID.:**			1243529	1243530	1243531	1243532	1243533	1243534	1243535	1243536	1243537
Order No.: .		Client Sample Ref.:			AE30-2	AE30-1	AC31-1	AC31-2	AD31-1	AD34-1	AD31-2	AD36-1	AD36-2
		Sample Type:			SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
		Top Depth (m):			1.4	0.3	0.3	1.6	0.6	0.5	1.1	0.6	1.5
		Bottom Depth (m):			1.4	0.3	0.3	1.6	0.6	0.5	1.1	0.6	1.5
		Date Sampled:			16-Jul-2021	16-Jul-2021	16-Jul-2021	16-Jul-2021	16-Jul-2021	16-Jul-2021	16-Jul-2021	16-Jul-2021	16-Jul-2021
		Asbestos Lab:				DURHAM		DURHAM	DURHAM	DURHAM		DURHAM	
Determinand	**Accred.**	**SOP**	**Units**	**LOD**									
ACM Type	U	2192		N/A		-		-	-	-		-	
Asbestos Identification	U	2192		N/A		No Asbestos Detected		No Asbestos Detected	No Asbestos Detected	No Asbestos Detected		No Asbestos Detected	
Moisture	N	2030	%	0.020	2.2	2.8	1.4	5.4	8.1	5.5	7.5	5.5	8.2
Soil Colour	N	2040		N/A	Grey	Grey	Grey	Brown	Brown	Brown	Brown	Brown	Brown
Other Material	N	2040		N/A	None	Stones	Stones	Stones	Stones	Stones	Stones	Stones	Stones
Soil Texture	N	2040		N/A	concrete	concrete	concrete	Sand	Sand	Sand	Sand	Sand	Sand
pH	M	2010		4.0	> 12.0	12.0	11.1	10.8	11.7	10.4	10.1	9.4	8.4
Cyanide (Total)	M	2300	mg/kg	0.50	< 0.50	1.2	< 0.50	2.7	6.3	11	5.9	0.50	9.0
Ammoniacal Nitrogen	M	2425	mg/kg	0.50	0.68	< 0.50	< 0.50	< 0.50	< 0.50	3.8	1.1	1.2	1.9
Iron (Total)	N	2430	mg/kg	100	33000	26000	7200	10000	32000	16000	19000	23000	18000
Arsenic	M	2450	mg/kg	1.0	15	18	22	24	18	11	15	10	9.7
Cadmium	M	2450	mg/kg	0.10	< 0.10	0.41	0.18	0.41	0.42	0.50	0.36	0.26	0.25
Chromium	M	2450	mg/kg	1.0	470	320	62	120	500	78	85	20	18
Manganese	M	2450	mg/kg	5.0	27000	19000	5000	7900	24000	4200	4800	1300	430
Copper	M	2450	mg/kg	0.50	440	210	47	73	420	220	73	140	280
Mercury	M	2450	mg/kg	0.10	0.43	0.27	< 0.10	0.15	0.38	0.15	0.34	0.17	0.27
Nickel	M	2450	mg/kg	0.50	15	13	5.7	16	31	23	29	29	30
Lead	M	2450	mg/kg	0.50	35	33	8.9	47	75	54	99	38	59
Selenium	M	2450	mg/kg	0.20	< 0.20	< 0.20	< 0.20	1.1	< 0.20	0.95	1.5	0.90	1.1
Vanadium	U	2450	mg/kg	5.0	500	990	160	290	350	71	130	30	26
Zinc	M	2450	mg/kg	0.50	37	67	37	280	120	130	200	73	76
Organic Matter	M	2625	%	0.40	< 0.40	0.55	< 0.40	1.4	1.4	4.3	3.5	6.0	4.8
Aliphatic TPH >C5-C6	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C6-C8	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C8-C10	M	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C10-C12	M	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C12-C16	M	2680	mg/kg	1.0	150	< 1.0	< 1.0	< 1.0	170	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C16-C21	M	2680	mg/kg	1.0	400	< 1.0	< 1.0	< 1.0	330	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C21-C35	M	2680	mg/kg	1.0	45	< 1.0	< 1.0	< 1.0	58	24	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C35-C44	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Total Aliphatic Hydrocarbons	N	2680	mg/kg	5.0	590	< 5.0	< 5.0	< 5.0	570	24	< 5.0	< 5.0	< 5.0
Aromatic TPH >C5-C7	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	49	50	< 1.0	< 1.0
Aromatic TPH >C7-C8	N	2680	mg/kg	1.0	41	< 1.0	< 1.0	< 1.0	< 1.0	44	45	< 1.0	< 1.0
Aromatic TPH >C8-C10	M	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	43	44	< 1.0	< 1.0
Aromatic TPH >C10-C12	M	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	47	48	< 1.0	< 1.0
Aromatic TPH >C12-C16	M	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	26	26	< 1.0	< 1.0

Results - Soil

Project: P18-669

Client: Rodgers Leask Environmental		**Chemtest Job No.:**			21-24808	21-24808	21-24808	21-24808	21-24808	21-24808	21-24808	21-24808	21-24808
Quotation No.: Q21-24056		**Chemtest Sample ID.:**			1243529	1243530	1243531	1243532	1243533	1243534	1243535	1243536	1243537
Order No.: .		Client Sample Ref.:			AE30-2	AE30-1	AC31-1	AC31-2	AD31-1	AD34-1	AD31-2	AD36-1	AD36-2
		Sample Type:			SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
		Top Depth (m):			1.4	0.3	0.3	1.6	0.6	0.5	1.1	0.6	1.5
		Bottom Depth (m):			1.4	0.3	0.3	1.6	0.6	0.5	1.1	0.6	1.5
		Date Sampled:			16-Jul-2021	16-Jul-2021	16-Jul-2021	16-Jul-2021	16-Jul-2021	16-Jul-2021	16-Jul-2021	16-Jul-2021	16-Jul-2021
		Asbestos Lab:				DURHAM		DURHAM	DURHAM	DURHAM		DURHAM	
Determinand	**Accred.**	**SOP**	**Units**	**LOD**									
Aromatic TPH >C16-C21	U	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	23	24	< 1.0	< 1.0
Aromatic TPH >C21-C35	M	2680	mg/kg	1.0	19	< 1.0	< 1.0	< 1.0	< 1.0	48	49	< 1.0	< 1.0
Aromatic TPH >C35-C44	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Total Aromatic Hydrocarbons	N	2680	mg/kg	5.0	60	< 5.0	< 5.0	< 5.0	< 5.0	280	290	< 5.0	< 5.0
Total Petroleum Hydrocarbons	N	2680	mg/kg	10.0	650	< 10	< 10	< 10	570	300	290	< 10	< 10
Benzene	M	2760	µg/kg	1.0	11	1.5	< 1.0	< 1.0	< 1.0	72	31	< 1.0	10
Toluene	M	2760	µg/kg	1.0	6.2	1.3	< 1.0	< 1.0	< 1.0	31	11	< 1.0	< 1.0
Ethylbenzene	M	2760	µg/kg	1.0	1.0	< 1.0	< 1.0	< 1.0	< 1.0	9.0	3.1	< 1.0	< 1.0
m & p-Xylene	M	2760	µg/kg	1.0	< 1.0	4.1	5.6	< 1.0	< 1.0	130	23	< 1.0	< 1.0
o-Xylene	M	2760	µg/kg	1.0	1.9	< 1.0	2.0	< 1.0	< 1.0	33	6.1	< 1.0	< 1.0
Methyl Tert-Butyl Ether	M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Naphthalene	M	2800	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Acenaphthylene	N	2800	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Acenaphthene	M	2800	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Fluorene	M	2800	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Phenanthrene	M	2800	mg/kg	0.10	0.58	< 0.10	< 0.10	< 0.10	0.56	< 0.10	< 0.10	< 0.10	< 0.10
Anthracene	M	2800	mg/kg	0.10	0.19	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Fluoranthene	M	2800	mg/kg	0.10	1.8	0.34	< 0.10	< 0.10	1.1	0.22	0.16	0.10	0.11
Pyrene	M	2800	mg/kg	0.10	1.7	0.35	< 0.10	< 0.10	1.1	0.17	0.15	< 0.10	0.14
Benzo[a]anthracene	M	2800	mg/kg	0.10	0.88	0.22	< 0.10	< 0.10	0.62	0.12	< 0.10	< 0.10	< 0.10
Chrysene	M	2800	mg/kg	0.10	0.78	0.40	< 0.10	< 0.10	0.82	0.20	< 0.10	< 0.10	0.25
Benzo[b]fluoranthene	M	2800	mg/kg	0.10	1.4	0.40	< 0.10	< 0.10	0.97	< 0.10	< 0.10	< 0.10	< 0.10
Benzo[k]fluoranthene	M	2800	mg/kg	0.10	0.51	0.19	< 0.10	< 0.10	0.39	< 0.10	< 0.10	< 0.10	< 0.10
Benzo[a]pyrene	M	2800	mg/kg	0.10	1.1	0.30	< 0.10	< 0.10	0.71	< 0.10	< 0.10	< 0.10	< 0.10
Indeno(1,2,3-c,d)Pyrene	M	2800	mg/kg	0.10	0.77	< 0.10	< 0.10	< 0.10	0.58	< 0.10	< 0.10	< 0.10	< 0.10
Dibenz(a,h)Anthracene	N	2800	mg/kg	0.10	0.15	< 0.10	< 0.10	< 0.10	0.14	< 0.10	< 0.10	< 0.10	< 0.10
Benzo[g,h,i]perylene	M	2800	mg/kg	0.10	0.72	< 0.10	< 0.10	< 0.10	0.61	< 0.10	< 0.10	< 0.10	< 0.10
Total Of 16 PAH's	N	2800	mg/kg	2.0	11	2.2	< 2.0	< 2.0	7.6	< 2.0	< 2.0	< 2.0	< 2.0
Resorcinol	M	2920	mg/kg	0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020
Phenol	M	2920	mg/kg	0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020
Cresols	M	2920	mg/kg	0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	0.088	< 0.020	< 0.020	< 0.020
Xylenols	M	2920	mg/kg	0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	0.46	< 0.020	< 0.020	< 0.020
1-Naphthol	N	2920	mg/kg	0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020
Trimethylphenols	M	2920	mg/kg	0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020
Total Phenols	M	2920	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	0.54	< 0.10	< 0.10	< 0.10

Results - Water

Project: P18-669

Client: Rodgers Leask Environmental			**Chemtest Job No.:**		21-24808
Quotation No.: Q21-24056			**Chemtest Sample ID.:**		1243538
Order No.: .			Client Sample Ref.:		D2-S
			Sample Type:		WATER
			Date Sampled:		19-Jul-2021
Determinand	**Accred.**	**SOP**	**Units**	**LOD**	
pH	U	1010		N/A	8.8
Electrical Conductivity	U	1020	µS/cm	1.0	730
Suspended Solids At 105C	U	1030	mg/l	5.0	40
Total Dissolved Solids	N	1020	mg/l	1.0	470
Turbidity	N	1060	NTU	1.0	24
Biochemical Oxygen Demand	N	1090	mg O2/l	4.0	< 4.0
Chemical Oxygen Demand	U	1100	mg O2/l	10	19
Dissolved Oxygen	N	1150	mg O2/l	0.50	8.3
Redox Potential	N	1170	mV	N/A	15
Chloride	U	1220	mg/l	1.0	61
Fluoride	U	1220	mg/l	0.050	0.56
Ammoniacal Nitrogen	U	1220	mg/l	0.050	0.54
Phosphorus (Total)	N	1220	mg/l	0.020	0.023
Phosphate	U	1220	mg/l	0.200	< 0.20
Phosphorus (Dissolved)	U	1220	mg/l	0.020	0.023
Sulphur	N	1220	mg/l	1.0	40
Sulphate	U	1220	mg/l	1.0	120
Cyanide (Total)	U	1300	mg/l	0.050	< 0.050
Cyanide (Free)	U	1300	mg/l	0.050	< 0.050
Thiocyanate	U	1300	mg/l	0.50	< 0.50
Cyanide (Complex)	U	1300	mg/l	0.050	< 0.050
Sulphide	U	1325	mg/l	0.050	< 0.050
Calcium	U	1455	mg/l	2.00	49
Magnesium	U	1455	mg/l	0.20	11
Total Calcium	N	1455	mg/l	5.0	48
Total Magnesium	N	1455	mg/l	0.50	11
Total Hardness as CaCO3	U	1270	mg/l	15	170
Arsenic (Dissolved)	U	1455	µg/l	0.20	3.7
Boron (Dissolved)	U	1455	µg/l	10.0	140
Barium (Dissolved)	U	1455	µg/l	5.00	61
Beryllium (Dissolved)	U	1455	µg/l	1.00	< 1.0
Cadmium (Dissolved)	U	1455	µg/l	0.11	< 0.11
Chromium (Dissolved)	U	1455	µg/l	0.50	0.70
Copper (Dissolved)	U	1455	µg/l	0.50	2.1
Iron (Dissolved)	N	1455	µg/l	5.0	67
Mercury (Dissolved)	U	1455	µg/l	0.05	< 0.05
Manganese (Dissolved)	U	1455	µg/l	0.50	29
Nickel (Dissolved)	U	1455	µg/l	0.50	2.0
Lead (Dissolved)	U	1455	µg/l	0.50	< 0.50
Antimony (Dissolved)	U	1455	µg/l	0.50	< 0.50

Results - Water

Project: P18-669

Client: Rodgers Leask Environmental			**Chemtest Job No.:**		21-24808
Quotation No.: Q21-24056			**Chemtest Sample ID.:**		1243538
Order No.: .			Client Sample Ref.:		D2-S
			Sample Type:		WATER
			Date Sampled:		19-Jul-2021
Determinand	**Accred.**	**SOP**	**Units**	**LOD**	
Selenium (Dissolved)	U	1455	µg/l	0.50	< 0.50
Vanadium (Dissolved)	U	1455	µg/l	0.50	8.1
Zinc (Dissolved)	U	1455	µg/l	2.5	82
Arsenic (Total)	N	1455	µg/l	0.20	4.3
Boron (Total)	N	1455	µg/l	10.0	180
Barium (Total)	N	1455	µg/l	5.00	59
Beryllium (Total)	N	1455	µg/l	1.00	< 1.0
Cadmium (Total)	N	1455	µg/l	0.11	< 0.11
Chromium (Total)	N	1455	µg/l	0.50	< 0.50
Copper (Total)	N	1455	µg/l	0.50	2.4
Iron (Total)	N	1455	µg/l	5.0	61
Mercury (Total)	N	1455	µg/l	0.05	< 0.05
Manganese (Total)	N	1455	µg/l	0.50	30
Nickel (Total)	N	1455	µg/l	0.50	2.2
Lead (Total)	N	1455	µg/l	0.50	< 0.50
Antimony (Total)	N	1455	µg/l	0.50	< 0.50
Selenium (Total)	N	1455	µg/l	0.50	< 0.50
Vanadium (Total)	N	1455	µg/l	0.50	8.2
Zinc (Total)	N	1455	µg/l	2.5	83
Chromium (Hexavalent)	U	1490	µg/l	20	< 20
Dissolved Organic Carbon	U	1610	mg/l	2.0	29
Total Inorganic Carbon	N	1220	mg/l	2.5	31
Total Organic Carbon	U	1610	mg/l	2.0	31
Aliphatic TPH >C5-C6	N	1675	µg/l	0.10	< 0.10
Aliphatic TPH >C6-C8	N	1675	µg/l	0.10	< 0.10
Aliphatic TPH >C8-C10	N	1675	µg/l	0.10	< 0.10
Aliphatic TPH >C10-C12	N	1675	µg/l	0.10	< 0.10
Aliphatic TPH >C12-C16	N	1675	µg/l	0.10	< 0.10
Aliphatic TPH >C16-C21	N	1675	µg/l	0.10	< 0.10
Aliphatic TPH >C21-C35	N	1675	µg/l	0.10	< 0.10
Aliphatic TPH >C35-C44	N	1675	µg/l	0.10	< 0.10
Total Aliphatic Hydrocarbons	N	1675	µg/l	5.0	< 5.0
Aromatic TPH >C5-C7	N	1675	µg/l	0.10	< 0.10
Aromatic TPH >C7-C8	N	1675	µg/l	0.10	< 0.10
Aromatic TPH >C8-C10	N	1675	µg/l	0.10	< 0.10
Aromatic TPH >C10-C12	N	1675	µg/l	0.10	< 0.10
Aromatic TPH >C12-C16	N	1675	µg/l	0.10	< 0.10
Aromatic TPH >C16-C21	N	1675	µg/l	0.10	< 0.10
Aromatic TPH >C21-C35	N	1675	µg/l	0.10	< 0.10
Aromatic TPH >C35-C44	N	1675	µg/l	0.10	< 0.10

Results - Water

Project: P18-669

Client: Rodgers Leask Environmental			**Chemtest Job No.:**		21-24808
Quotation No.: Q21-24056			**Chemtest Sample ID.:**		1243538
Order No.: .			Client Sample Ref.:		D2-S
			Sample Type:		WATER
			Date Sampled:		19-Jul-2021
Determinand	**Accred.**	**SOP**	**Units**	**LOD**	
Total Aromatic Hydrocarbons	N	1675	µg/l	5.0	< 5.0
Total Petroleum Hydrocarbons	N	1675	µg/l	10	< 10
Dichlorodifluoromethane	U	1760	µg/l	1.0	< 1.0
Chloromethane	U	1760	µg/l	1.0	< 1.0
Vinyl Chloride	N	1760	µg/l	1.0	< 1.0
Bromomethane	U	1760	µg/l	5	< 5
Chloroethane	U	1760	µg/l	2.0	< 2.0
Trichlorofluoromethane	U	1760	µg/l	1.0	< 1.0
1,1-Dichloroethene	U	1760	µg/l	1.0	< 1.0
Trans 1,2-Dichloroethene	U	1760	µg/l	1.0	< 1.0
1,1-Dichloroethane	U	1760	µg/l	1.0	< 1.0
cis 1,2-Dichloroethene	U	1760	µg/l	1.0	< 1.0
Bromochloromethane	U	1760	µg/l	5	< 5
Trichloromethane	U	1760	µg/l	1.0	< 1.0
1,1,1-Trichloroethane	U	1760	µg/l	1.0	< 1.0
Tetrachloromethane	U	1760	µg/l	1.0	< 1.0
1,1-Dichloropropene	U	1760	µg/l	1.0	< 1.0
Benzene	U	1760	µg/l	1.0	< 1.0
1,2-Dichloroethane	U	1760	µg/l	2.0	< 2.0
Trichloroethene	N	1760	µg/l	1.0	< 1.0
1,2-Dichloropropane	U	1760	µg/l	1.0	< 1.0
Dibromomethane	U	1760	µg/l	10	< 10
Bromodichloromethane	U	1760	µg/l	5	< 5
cis-1,3-Dichloropropene	N	1760	µg/l	10	< 10
Toluene	U	1760	µg/l	1.0	< 1.0
Trans-1,3-Dichloropropene	N	1760	µg/l	10	< 10
1,1,2-Trichloroethane	U	1760	µg/l	10	< 10
Tetrachloroethene	U	1760	µg/l	1.0	< 1.0
1,3-Dichloropropane	U	1760	µg/l	2.0	< 2.0
Dibromochloromethane	U	1760	µg/l	10	< 10
1,2-Dibromoethane	U	1760	µg/l	5	< 5
Chlorobenzene	N	1760	µg/l	1.0	< 1.0
1,1,1,2-Tetrachloroethane	U	1760	µg/l	2.0	< 2.0
Ethylbenzene	U	1760	µg/l	1.0	< 1.0
m & p-Xylene	U	1760	µg/l	1.0	< 1.0
o-Xylene	U	1760	µg/l	1.0	< 1.0
Styrene	U	1760	µg/l	1.0	< 1.0
Tribromomethane	U	1760	µg/l	1.0	< 1.0
Isopropylbenzene	U	1760	µg/l	1.0	< 1.0
Bromobenzene	U	1760	µg/l	1.0	< 1.0

Results - Water

Project: P18-669

Client: Rodgers Leask Environmental			**Chemtest Job No.:**		21-24808
Quotation No.: Q21-24056			**Chemtest Sample ID.:**		1243538
Order No.: .			Client Sample Ref.:		D2-S
			Sample Type:		WATER
			Date Sampled:		19-Jul-2021
Determinand	**Accred.**	**SOP**	**Units**	**LOD**	
1,2,3-Trichloropropane	N	1760	µg/l	50	< 50
N-Propylbenzene	U	1760	µg/l	1.0	< 1.0
2-Chlorotoluene	U	1760	µg/l	1.0	< 1.0
1,3,5-Trimethylbenzene	U	1760	µg/l	1.0	< 1.0
4-Chlorotoluene	U	1760	µg/l	1.0	< 1.0
Tert-Butylbenzene	U	1760	µg/l	1.0	< 1.0
1,2,4-Trimethylbenzene	U	1760	µg/l	1.0	< 1.0
Sec-Butylbenzene	U	1760	µg/l	1.0	< 1.0
1,3-Dichlorobenzene	N	1760	µg/l	1.0	< 1.0
4-Isopropyltoluene	U	1760	µg/l	1.0	< 1.0
1,4-Dichlorobenzene	U	1760	µg/l	1.0	< 1.0
N-Butylbenzene	U	1760	µg/l	1.0	< 1.0
1,2-Dichlorobenzene	U	1760	µg/l	1.0	< 1.0
1,2-Dibromo-3-Chloropropane	U	1760	µg/l	50	< 50
1,2,4-Trichlorobenzene	U	1760	µg/l	1.0	< 1.0
Hexachlorobutadiene	U	1760	µg/l	1.0	< 1.0
1,2,3-Trichlorobenzene	U	1760	µg/l	2.0	< 2.0
Methyl Tert-Butyl Ether	N	1760	µg/l	1.0	< 1.0
N-Nitrosodimethylamine	N	1790	µg/l	0.50	< 0.50
Phenol	N	1790	µg/l	0.50	< 0.50
2-Chlorophenol	N	1790	µg/l	0.50	< 0.50
Bis-(2-Chloroethyl)Ether	N	1790	µg/l	0.50	< 0.50
1,3-Dichlorobenzene	N	1790	µg/l	0.50	< 0.50
1,4-Dichlorobenzene	N	1790	µg/l	0.50	< 0.50
1,2-Dichlorobenzene	N	1790	µg/l	0.50	< 0.50
2-Methylphenol (o-Cresol)	N	1790	µg/l	0.50	< 0.50
Bis(2-Chloroisopropyl)Ether	N	1790	µg/l	0.50	< 0.50
Hexachloroethane	N	1790	µg/l	0.50	< 0.50
N-Nitrosodi-n-propylamine	N	1790	µg/l	0.50	< 0.50
4-Methylphenol	N	1790	µg/l	0.50	< 0.50
Nitrobenzene	N	1790	µg/l	0.50	< 0.50
Isophorone	N	1790	µg/l	0.50	< 0.50
2-Nitrophenol	N	1790	µg/l	0.50	< 0.50
2,4-Dimethylphenol	N	1790	µg/l	0.50	< 0.50
Bis(2-Chloroethoxy)Methane	N	1790	µg/l	0.50	< 0.50
2,4-Dichlorophenol	N	1790	µg/l	0.50	< 0.50
1,2,4-Trichlorobenzene	N	1790	µg/l	0.50	< 0.50
Naphthalene	N	1790	µg/l	0.50	< 0.50
4-Chloroaniline	N	1790	µg/l	0.50	< 0.50
Hexachlorobutadiene	N	1790	µg/l	0.50	< 0.50

Results - Water

Project: P18-669

Client: Rodgers Leask Environmental			**Chemtest Job No.:**		21-24808
Quotation No.: Q21-24056			**Chemtest Sample ID.:**		1243538
Order No.: .			Client Sample Ref.:		D2-S
			Sample Type:		WATER
			Date Sampled:		19-Jul-2021
Determinand	**Accred.**	**SOP**	**Units**	**LOD**	
4-Chloro-3-Methylphenol	N	1790	µg/l	0.50	< 0.50
2-Methylnaphthalene	N	1790	µg/l	0.50	< 0.50
Hexachlorocyclopentadiene	N	1790	µg/l	0.50	< 0.50
2,4,6-Trichlorophenol	N	1790	µg/l	0.50	< 0.50
2,4,5-Trichlorophenol	N	1790	µg/l	0.50	< 0.50
2-Chloronaphthalene	N	1790	µg/l	0.50	< 0.50
2-Nitroaniline	N	1790	µg/l	0.50	< 0.50
Acenaphthylene	N	1790	µg/l	0.50	< 0.50
Dimethylphthalate	N	1790	µg/l	0.50	< 0.50
2,6-Dinitrotoluene	N	1790	µg/l	0.50	< 0.50
Acenaphthene	N	1790	µg/l	0.50	< 0.50
3-Nitroaniline	N	1790	µg/l	0.50	< 0.50
Dibenzofuran	N	1790	µg/l	0.50	< 0.50
4-Chlorophenylphenylether	N	1790	µg/l	0.50	< 0.50
2,4-Dinitrotoluene	N	1790	µg/l	0.50	< 0.50
Fluorene	N	1790	µg/l	0.50	< 0.50
Diethyl Phthalate	N	1790	µg/l	0.50	< 0.50
4-Nitroaniline	N	1790	µg/l	0.50	< 0.50
2-Methyl-4,6-Dinitrophenol	N	1790	µg/l	0.50	< 0.50
Azobenzene	N	1790	µg/l	0.50	< 0.50
4-Bromophenylphenyl Ether	N	1790	µg/l	0.50	< 0.50
Hexachlorobenzene	N	1790	µg/l	0.50	< 0.50
Pentachlorophenol	N	1790	µg/l	0.50	< 0.50
Phenanthrene	N	1790	µg/l	0.50	< 0.50
Anthracene	N	1790	µg/l	0.50	< 0.50
Carbazole	N	1790	µg/l	0.50	< 0.50
Di-N-Butyl Phthalate	N	1790	µg/l	0.50	< 0.50
Fluoranthene	N	1790	µg/l	0.50	< 0.50
Pyrene	N	1790	µg/l	0.50	< 0.50
Butylbenzyl Phthalate	N	1790	µg/l	0.50	< 0.50
Benzo[a]anthracene	N	1790	µg/l	0.50	< 0.50
Chrysene	N	1790	µg/l	0.50	< 0.50
Bis(2-Ethylhexyl)Phthalate	N	1790	µg/l	0.50	< 0.50
Di-N-Octyl Phthalate	N	1790	µg/l	0.50	< 0.50
Benzo[b]fluoranthene	N	1790	µg/l	0.50	< 0.50
Benzo[k]fluoranthene	N	1790	µg/l	0.50	< 0.50
Benzo[a]pyrene	N	1790	µg/l	0.50	< 0.50
Indeno(1,2,3-c,d)Pyrene	N	1790	µg/l	0.50	< 0.50
Dibenz(a,h)Anthracene	N	1790	µg/l	0.50	< 0.50
Benzo[g,h,i]perylene	N	1790	µg/l	0.50	< 0.50

Results - Water

Project: P18-669

Client: Rodgers Leask Environmental			**Chemtest Job No.:**		21-24808
Quotation No.: Q21-24056			**Chemtest Sample ID.:**		1243538
Order No.: .			Client Sample Ref.:		D2-S
			Sample Type:		WATER
			Date Sampled:		19-Jul-2021
Determinand	**Accred.**	**SOP**	**Units**	**LOD**	
4-Nitrophenol	N	1790	µg/l	0.50	< 0.50
Naphthalene	U	1800	µg/l	0.10	< 0.10
Acenaphthylene	U	1800	µg/l	0.10	< 0.10
Acenaphthene	U	1800	µg/l	0.10	< 0.10
Fluorene	U	1800	µg/l	0.10	< 0.10
Phenanthrene	U	1800	µg/l	0.10	< 0.10
Anthracene	U	1800	µg/l	0.10	< 0.10
Fluoranthene	U	1800	µg/l	0.10	< 0.10
Pyrene	U	1800	µg/l	0.10	< 0.10
Benzo[a]anthracene	U	1800	µg/l	0.10	< 0.10
Chrysene	U	1800	µg/l	0.10	< 0.10
Benzo[b]fluoranthene	U	1800	µg/l	0.10	< 0.10
Benzo[k]fluoranthene	U	1800	µg/l	0.10	< 0.10
Benzo[a]pyrene	U	1800	µg/l	0.10	< 0.10
Indeno(1,2,3-c,d)Pyrene	U	1800	µg/l	0.10	< 0.10
Dibenz(a,h)Anthracene	U	1800	µg/l	0.10	< 0.10
Benzo[g,h,i]perylene	U	1800	µg/l	0.10	< 0.10
Total Of 16 PAH's	U	1800	µg/l	2.0	< 2.0
Total Phenols	U	1920	mg/l	0.030	< 0.030

Test Methods

SOP	Title	Parameters included	Method summary
1010	pH Value of Waters	pH	pH Meter
1020	Electrical Conductivity and Total Dissolved Solids (TDS) in Waters	Electrical Conductivity and Total Dissolved Solids (TDS) in Waters	Conductivity Meter
1030	Total Suspended Solids	Total suspended solids	Filtration of a mixed sample through a standard glass fibre filter and determination of the mass of residue retained dried at 105°C.
1060	Turbidity	Turbidity	Spetctrophotometry
1090	Biochemical Oxygen Demand	Biochemical Oxygen demand (BOD)	Colorimetric determination of dissolved oxygen in seeded sample after 5 days incubation at 20°C.
1100	Chemical Oxygen Demand	Chemical Oxygen demand (COD)	Dichromate oxidation of organic matter in sample followed by colorimetric determination of residual Cr[VI].
1150	Dissolved Oxygen	Dissolved Oxygen (DO)	Electrometric determination (on site preferred), using oxygen sensitive membrane electrode.
1170	Redox Potential	Redox Potential	Meter
1220	Anions, Alkalinity & Ammonium in Waters	Fluoride; Chloride; Nitrite; Nitrate; Total; Oxidisable Nitrogen (TON); Sulfate; Phosphate; Alkalinity; Ammonium	Automated colorimetric analysis using 'Aquakem 600' Discrete Analyser.
1270	Total Hardness of Waters	Total hardness	Calculation applied to calcium and magnesium results, expressed as mg l-1 CaCO3 equivalent.
1300	Cyanides & Thiocyanate in Waters	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Continuous Flow Analysis.
1325	Sulphide in Waters	Sulphides	Automated colorimetric analysis by 'Aquakem 600' Discrete Analyser using N,N–dimethyl-pphenylenediamine.
1455	Metals in Waters by ICP-MS	Metals, including: Antimony; Arsenic; Barium; Beryllium; Boron; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Tin; Vanadium; Zinc	Filtration of samples followed by direct determination by inductively coupled plasma mass spectrometry (ICP-MS).
1490	Hexavalent Chromium in Waters	Chromium [VI]	Automated colorimetric analysis by 'Aquakem 600' Discrete Analyser using 1,5-diphenylcarbazide.
1610	Total/Dissolved Organic Carbon in Waters	Organic Carbon	TOC Analyser using Catalytic Oxidation
1675	TPH Aliphatic/Aromatic split in Waters by GC-FID(cf. Texas Method 1006 / TPH CWG)	Aliphatics: >C5–C6, >C6–C8, >C8– C10, >C10–C12, >C12–C16, >C16–C21, >C21–C35, >C35– C44Aromatics: >C5–C7, >C7–C8, >C8– C10, >C10–C12, >C12–C16, >C16– C21, >C21– C35, >C35– C44	Pentane extraction / GCxGC FID detection
1760	Volatile Organic Compounds (VOCs) in Waters by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics. (cf. USEPA Method 8260)	Automated headspace gas chromatographic (GC) analysis of water samples with mass spectrometric (MS) detection of volatile organic compounds.
1790	Semi-Volatile Organic Compounds (SVOCs) in Waters by GC-MS	Semi-volatile organic compounds	Solvent extraction / GCMS detection
1800	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Waters by GC-MS	Acenaphthene; Acenaphthylene; Anthracene; Benzo[a]Anthracene; Benzo[a]Pyrene; Benzo[b]Fluoranthene; Benzo[ghi]Perylene; Benzo[k]Fluoranthene; Chrysene; Dibenz[ah]Anthracene; Fluoranthene; Fluorene; Indeno[123cd]Pyrene; Naphthalene; Phenanthrene; Pyrene	Pentane extraction / GCMS detection
1920	Phenols in Waters by HPLC	Phenolic compounds including: Phenol, Cresols, Xylenols, Trimethylphenols Note: Chlorophenols are excluded.	Determination by High Performance Liquid Chromatography (HPLC) using electrochemical detection.

Test Methods

SOP	Title	Parameters included	Method summary
2010	pH Value of Soils	pH	pH Meter
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <37°C.
2040	Soil Description(Requirement of MCERTS)	Soil description	As received soil is described based upon BS5930
2192	Asbestos	Asbestos	Polarised light microscopy / Gravimetry
2300	Cyanides & Thiocyanate in Soils	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Allkaline extraction followed by colorimetric determination using Automated Flow Injection Analyser.
2425	Extractable Ammonium in soils	Ammonium	Extraction with potassium chloride solution / analysis by 'Aquakem 600' Discrete Analyser using sodium salicylate and sodium dichloroisocyanurate.
2430	Total Sulphate in soils	Total Sulphate	Acid digestion followed by determination of sulphate in extract by ICP-OES.
2450	Acid Soluble Metals in Soils	Metals, including: Arsenic; Barium; Beryllium; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Vanadium; Zinc	Acid digestion followed by determination of metals in extract by ICP-MS.
2625	Total Organic Carbon in Soils	Total organic Carbon (TOC)	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.
2680	TPH A/A Split	Aliphatics: >C5–C6, >C6–C8,>C8–C10, >C10–C12, >C12–C16, >C16–C21, >C21–C35, >C35– C44Aromatics: >C5–C7, >C7–C8, >C8– C10, >C10–C12, >C12–C16, >C16– C21, >C21– C35, >C35– C44	Dichloromethane extraction / GCxGC FID detection
2760	Volatile Organic Compounds (VOCs) in Soils by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics.(cf. USEPA Method 8260)*please refer to UKAS schedule	Automated headspace gas chromatographic (GC) analysis of a soil sample, as received, with mass spectrometric (MS) detection of volatile organic compounds.
2800	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Soil by GC-MS	Acenaphthene*; Acenaphthylene; Anthracene*; Benzo[a]Anthracene*; Benzo[a]Pyrene*; Benzo[b]Fluoranthene*; Benzo[ghi]Perylene*; Benzo[k]Fluoranthene; Chrysene*; Dibenz[ah]Anthracene; Fluoranthene*; Fluorene*; Indeno[123cd]Pyrene*; Naphthalene*; Phenanthrene*; Pyrene*	Dichloromethane extraction / GC-MS
2920	Phenols in Soils by HPLC	Phenolic compounds including Resorcinol, Phenol, Methylphenols, Dimethylphenols, 1-Naphthol and TrimethylphenolsNote: chlorophenols are excluded.	60:40 methanol/water mixture extraction, followed by HPLC determination using electrochemical detection.

Report Information

Key

U	UKAS accredited
M	MCERTS and UKAS accredited
N	Unaccredited
S	This analysis has been subcontracted to a UKAS accredited laboratory that is accredited for this analysis
SN	This analysis has been subcontracted to a UKAS accredited laboratory that is not accredited for this analysis
T	This analysis has been subcontracted to an unaccredited laboratory
I/S	Insufficient Sample
U/S	Unsuitable Sample
N/E	not evaluated
<	"less than"
>	"greater than"
SOP	Standard operating procedure
LOD	Limit of detection

Comments or interpretations are beyond the scope of UKAS accreditation
The results relate only to the items tested
Uncertainty of measurement for the determinands tested are available upon request
None of the results in this report have been recovery corrected
All results are expressed on a dry weight basis

The following tests were analysed on samples as received and the results subsequently corrected to a dry weight basis TPH, BTEX, VOCs, SVOCs, PCBs, Phenols

For all other tests the samples were dried at < 37°C prior to analysis
All Asbestos testing is performed at the indicated laboratory
Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1

Sample Deviation Codes

A - Date of sampling not supplied
B - Sample age exceeds stability time (sampling to extraction)
C - Sample not received in appropriate containers
D - Broken Container
E - Insufficient Sample (Applies to LOI in Trommel Fines Only)

Sample Retention and Disposal

All soil samples will be retained for a period of 30 days from the date of receipt
All water samples will be retained for 14 days from the date of receipt
Charges may apply to extended sample storage

If you require extended retention of samples, please email your requirements to:
customerservices@chemtest.com

eurofins | Chemtest
Eurofins Chemtest Ltd
Depot Road
Newmarket
CB8 0AL
Tel: 01638 606070
Email: info@chemtest.com

Final Report

Report No.:	22-02012-1
Initial Date of Issue:	03-Feb-2022
Client	Rodgers Leask Environmental
Client Address:	Office 225 2430/2440 Aztec West Almoundsbury Bristol BS32 4AQ
Contact(s):	Chris Wilson David McCarroll
Project	P18-669
Quotation No.:	Q21-24056
Order No.:	PO115623
No. of Samples:	35
Turnaround (Wkdays):	5
Date Approved:	03-Feb-2022
Approved By:	
Details:	Stuart Henderson, Technical Manager

Date Received:	21-Jan-2022
Date Instructed:	21-Jan-2022
Results Due:	27-Jan-2022

Results - Soil

Project: P18-669

Client: Rodgers Leask Environmental		**Chemtest Job No.:**			22-02012	22-02012	22-02012	22-02012	22-02012	22-02012	22-02012	22-02012	22-02012
Quotation No.: Q21-24056		**Chemtest Sample ID.:**			1355689	1355690	1355691	1355692	1355693	1355694	1355695	1355696	1355697
Order No.: PO115623		Client Sample Ref.:			2BSE-36	2BSE-37	2BSE-38	2BSE-39	2BSE-40	2BSE-41	2BSE-42	2BSE-43	2BSE-44
		Sample Type:			SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
		Date Sampled:			19-Jan-2022	19-Jan-2022	19-Jan-2022	19-Jan-2022	19-Jan-2022	19-Jan-2022	19-Jan-2022	19-Jan-2022	19-Jan-2022
		Asbestos Lab:			DURHAM		DURHAM		DURHAM		DURHAM		DURHAM
Determinand	**Accred.**	**SOP**	**Units**	**LOD**									
ACM Type	U	2192		N/A	-		-		-		-		-
Asbestos Identification	U	2192		N/A	No Asbestos Detected		No Asbestos Detected		No Asbestos Detected		No Asbestos Detected		No Asbestos Detected
Moisture	N	2030	%	0.020	14	11	12	12	10	11	12	13	7.2
Soil Colour	N	2040		N/A	Black	Black	Black	Black	Black	Brown	Black	Black	Brown
Other Material	N	2040		N/A	Stones	Stones	Stones	Stones and Roots	Stones	Stones	Stones	Stones	Stones
Soil Texture	N	2040		N/A	Loam	Loam	Loam	Loam	Loam	Gravel	Gravel	Gravel	Gravel
pH	M	2010		4.0	10.1	10.8	10.4	10.4	11.1	10.9	10.9	10.7	10.4
Cyanide (Total)	M	2300	mg/kg	0.50	1.6	1.6	1.6	1.3	2.0	1.8	1.6	2.9	2.8
Ammoniacal Nitrogen	M	2425	mg/kg	0.50	2.6	0.86	1.9	1.2	0.76	0.93	1.3	2.1	0.75
Iron (Total)	N	2430	mg/kg	100	31000	30000	31000	31000	30000	30000	32000	31000	29000
Arsenic	M	2450	mg/kg	1.0	10	12	12	12	12	11	14	11	9.7
Cadmium	M	2450	mg/kg	0.10	2.1	1.5	2.1	1.7	2.1	2.2	1.9	2.0	1.3
Chromium	M	2450	mg/kg	1.0	130	240	170	200	190	200	170	180	150
Manganese	M	2450	mg/kg	5.0	7900	16000	11000	13000	13000	13000	12000	13000	10000
Copper	M	2450	mg/kg	0.50	35	46	44	37	44	37	40	36	31
Mercury	M	2450	mg/kg	0.10	0.28	0.41	0.37	0.39	0.38	0.37	0.42	0.34	0.30
Nickel	M	2450	mg/kg	0.50	27	28	33	27	26	25	32	27	23
Lead	M	2450	mg/kg	0.50	260	210	290	230	250	240	240	260	160
Selenium	M	2450	mg/kg	0.20	0.68	0.83	0.88	0.81	0.89	0.77	0.78	0.73	0.98
Vanadium	U	2450	mg/kg	5.0	180	350	270	300	260	270	240	360	190
Zinc	M	2450	mg/kg	0.50	560	410	580	480	590	520	510	550	400
Organic Matter	M	2625	%	0.40	24	36	36	40	43	36	28	21	29
Aliphatic TPH >C5-C6	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C6-C8	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C8-C10	M	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C10-C12	M	2680	mg/kg	1.0	11	7.4	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C12-C16	M	2680	mg/kg	1.0	19	15	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C16-C21	M	2680	mg/kg	1.0	59	98	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C21-C35	M	2680	mg/kg	1.0	98	78	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C35-C44	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Total Aliphatic Hydrocarbons	N	2680	mg/kg	5.0	190	200	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Aromatic TPH >C5-C7	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C7-C8	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C8-C10	M	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C10-C12	M	2680	mg/kg	1.0	21	19	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C12-C16	M	2680	mg/kg	1.0	5.1	20	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C16-C21	U	2680	mg/kg	1.0	55	190	84	150	100	120	73	77	62

Results - Soil

Project: P18-669

Client: Rodgers Leask Environmental		**Chemtest Job No.:**			22-02012	22-02012	22-02012	22-02012	22-02012	22-02012	22-02012	22-02012	22-02012
Quotation No.: Q21-24056		**Chemtest Sample ID.:**			1355689	1355690	1355691	1355692	1355693	1355694	1355695	1355696	1355697
Order No.: PO115623		Client Sample Ref.:			2BSE-36	2BSE-37	2BSE-38	2BSE-39	2BSE-40	2BSE-41	2BSE-42	2BSE-43	2BSE-44
		Sample Type:			SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
		Date Sampled:			19-Jan-2022	19-Jan-2022	19-Jan-2022	19-Jan-2022	19-Jan-2022	19-Jan-2022	19-Jan-2022	19-Jan-2022	19-Jan-2022
		Asbestos Lab:			DURHAM		DURHAM		DURHAM		DURHAM		DURHAM
Determinand	**Accred.**	**SOP**	**Units**	**LOD**									
Aromatic TPH >C21-C35	M	2680	mg/kg	1.0	250	590	110	190	140	160	160	130	120
Aromatic TPH >C35-C44	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Total Aromatic Hydrocarbons	N	2680	mg/kg	5.0	330	820	200	340	240	280	230	210	180
Total Petroleum Hydrocarbons	N	2680	mg/kg	10.0	510	1000	200	340	240	280	230	210	180
Benzene	M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Toluene	M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Ethylbenzene	M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
m & p-Xylene	M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
o-Xylene	M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Methyl Tert-Butyl Ether	M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Naphthalene	M	2800	mg/kg	0.10	90	30	45	12	11	11	29	10	10
Acenaphthylene	N	2800	mg/kg	0.10	30	5.5	12	6.0	4.9	4.6	7.7	4.1	4.3
Acenaphthene	M	2800	mg/kg	0.10	2.9	1.2	1.9	0.78	0.92	0.81	1.2	0.63	0.69
Fluorene	M	2800	mg/kg	0.10	34	5.4	11	5.0	3.5	2.7	9.0	2.5	3.5
Phenanthrene	M	2800	mg/kg	0.10	170	29	59	43	26	23	52	21	25
Anthracene	M	2800	mg/kg	0.10	35	11	16	14	10	7.1	19	8.3	7.7
Fluoranthene	M	2800	mg/kg	0.10	150	49	78	92	55	49	82	49	47
Pyrene	M	2800	mg/kg	0.10	99	33	52	65	37	35	54	33	33
Benzo[a]anthracene	M	2800	mg/kg	0.10	59	20	30	35	26	25	35	22	23
Chrysene	M	2800	mg/kg	0.10	61	21	32	35	26	24	36	22	21
Benzo[b]fluoranthene	M	2800	mg/kg	0.10	79	28	41	47	36	35	44	29	30
Benzo[k]fluoranthene	M	2800	mg/kg	0.10	29	8.8	13	16	13	12	15	10	10
Benzo[a]pyrene	M	2800	mg/kg	0.10	53	20	28	36	27	27	31	22	23
Indeno(1,2,3-c,d)Pyrene	M	2800	mg/kg	0.10	47	17	25	32	23	24	28	19	20
Dibenz(a,h)Anthracene	N	2800	mg/kg	0.10	11	4.0	5.2	5.4	4.5	4.5	5.8	3.6	3.8
Benzo[g,h,i]perylene	M	2800	mg/kg	0.10	38	15	20	26	18	18	22	14	15
Total Of 16 PAH's	N	2800	mg/kg	2.0	990	300	470	470	320	300	470	270	280
Resorcinol	M	2920	mg/kg	0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020
Phenol	M	2920	mg/kg	0.020	< 0.020	< 0.020	0.25	< 0.020	< 0.020	< 0.020	< 0.020	0.072	< 0.020
Cresols	M	2920	mg/kg	0.020	< 0.020	< 0.020	0.077	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020
Xylenols	M	2920	mg/kg	0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020
1-Naphthol	N	2920	mg/kg	0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020
Trimethylphenols	M	2920	mg/kg	0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020
Total Phenols	M	2920	mg/kg	0.10	< 0.10	< 0.10	0.33	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10

Results - Soil

Project: P18-669

Client: Rodgers Leask Environmental		**Chemtest Job No.:**			22-02012	22-02012	22-02012	22-02012	22-02012	22-02012	22-02012	22-02012	22-02012
Quotation No.: Q21-24056		**Chemtest Sample ID.:**			1355698	1355699	1355700	1355701	1355702	1355703	1355704	1355705	1355706
Order No.: PO115623		Client Sample Ref.:			2BSE-45	2BSE-46	2BSE-47	2BSE-48	2BSE-49	2BSE-50	2BSE-51	2BSE-52	2BSE-53
		Sample Type:			SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
		Date Sampled:			19-Jan-2022	19-Jan-2022	19-Jan-2022	19-Jan-2022	19-Jan-2022	19-Jan-2022	19-Jan-2022	19-Jan-2022	19-Jan-2022
		Asbestos Lab:				DURHAM		DURHAM		DURHAM		DURHAM	
Determinand	**Accred.**	**SOP**	**Units**	**LOD**									
ACM Type	U	2192		N/A		-		-		-		-	
Asbestos Identification	U	2192		N/A		No Asbestos Detected		No Asbestos Detected		No Asbestos Detected		No Asbestos Detected	
Moisture	N	2030	%	0.020	9.7	12	14	12	11	14	13	13	11
Soil Colour	N	2040		N/A	Brown	Brown	Brown	Brown	Brown	Brown	Black	Brown	Black
Other Material	N	2040		N/A	Stones	Stones	Stones	Stones	Stones	Stones	Stones	Stones	Stones
Soil Texture	N	2040		N/A	Gravel	Gravel	Loam	Loam	Gravel	Loam	Loam	Loam	Loam
pH	M	2010		4.0	10.2	10.3	10.1	10.6	10.7	10.5	10.3	10.4	10.6
Cyanide (Total)	M	2300	mg/kg	0.50	3.6	2.5	3.2	3.1	2.9	2.5	4.6	2.6	5.2
Ammoniacal Nitrogen	M	2425	mg/kg	0.50	0.72	1.9	0.86	0.86	1.2	1.2	0.54	1.1	1.1
Iron (Total)	N	2430	mg/kg	100	30000	31000	17000	14000	30000	31000	31000	30000	25000
Arsenic	M	2450	mg/kg	1.0	11	12	15	15	15	14	14	16	8.0
Cadmium	M	2450	mg/kg	0.10	1.8	2.6	2.6	1.5	1.6	2.0	1.9	2.2	0.83
Chromium	M	2450	mg/kg	1.0	160	180	170	170	190	150	170	200	130
Manganese	M	2450	mg/kg	5.0	11000	10000	10000	9900	14000	9200	10000	14000	9600
Copper	M	2450	mg/kg	0.50	53	57	38	53	63	34	41	27	19
Mercury	M	2450	mg/kg	0.10	0.38	0.50	0.39	0.33	0.47	0.39	0.43	0.41	0.36
Nickel	M	2450	mg/kg	0.50	27	33	28	26	25	27	28	33	19
Lead	M	2450	mg/kg	0.50	240	400	330	200	210	240	240	320	110
Selenium	M	2450	mg/kg	0.20	1.1	0.85	0.85	0.72	0.82	0.91	0.79	0.89	0.81
Vanadium	U	2450	mg/kg	5.0	270	240	250	240	330	210	270	300	230
Zinc	M	2450	mg/kg	0.50	530	700	610	420	470	540	510	620	240
Organic Matter	M	2625	%	0.40	33	29	41	36	36	33	43	21	33
Aliphatic TPH >C5-C6	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C6-C8	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C8-C10	M	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C10-C12	M	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C12-C16	M	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C16-C21	M	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	13	< 1.0	< 1.0	22	72
Aliphatic TPH >C21-C35	M	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	230
Aliphatic TPH >C35-C44	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Total Aliphatic Hydrocarbons	N	2680	mg/kg	5.0	< 5.0	< 5.0	< 5.0	< 5.0	13	< 5.0	< 5.0	22	300
Aromatic TPH >C5-C7	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C7-C8	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C8-C10	M	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C10-C12	M	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C12-C16	M	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	27	< 1.0
Aromatic TPH >C16-C21	U	2680	mg/kg	1.0	57	84	28	180	100	62	80	410	60

Results - Soil

Project: P18-669

Client: Rodgers Leask Environmental		**Chemtest Job No.:**			22-02012	22-02012	22-02012	22-02012	22-02012	22-02012	22-02012	22-02012	22-02012
Quotation No.: Q21-24056		**Chemtest Sample ID.:**			1355698	1355699	1355700	1355701	1355702	1355703	1355704	1355705	1355706
Order No.: PO115623		Client Sample Ref.:			2BSE-45	2BSE-46	2BSE-47	2BSE-48	2BSE-49	2BSE-50	2BSE-51	2BSE-52	2BSE-53
		Sample Type:			SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
		Date Sampled:			19-Jan-2022	19-Jan-2022	19-Jan-2022	19-Jan-2022	19-Jan-2022	19-Jan-2022	19-Jan-2022	19-Jan-2022	19-Jan-2022
		Asbestos Lab:				DURHAM		DURHAM		DURHAM		DURHAM	
Determinand	**Accred.**	**SOP**	**Units**	**LOD**									
Aromatic TPH >C21-C35	M	2680	mg/kg	1.0	140	160	150	160	250	170	170	890	160
Aromatic TPH >C35-C44	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Total Aromatic Hydrocarbons	N	2680	mg/kg	5.0	200	240	180	340	350	230	250	1300	220
Total Petroleum Hydrocarbons	N	2680	mg/kg	10.0	200	240	180	340	360	230	250	1400	530
Benzene	M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Toluene	M	2760	µg/kg	1.0	18	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Ethylbenzene	M	2760	µg/kg	1.0	48	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
m & p-Xylene	M	2760	µg/kg	1.0	310	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
o-Xylene	M	2760	µg/kg	1.0	3.3	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Methyl Tert-Butyl Ether	M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Naphthalene	M	2800	mg/kg	0.10	13	12	30	13	29	19	13	20	1.7
Acenaphthylene	N	2800	mg/kg	0.10	5.1	4.3	8.0	8.8	7.7	8.0	5.2	5.0	1.1
Acenaphthene	M	2800	mg/kg	0.10	0.70	0.97	1.4	1.0	1.2	1.3	0.95	0.72	0.35
Fluorene	M	2800	mg/kg	0.10	3.2	3.4	6.2	9.1	6.7	6.8	4.2	3.1	0.92
Phenanthrene	M	2800	mg/kg	0.10	23	23	46	58	41	50	31	23	5.2
Anthracene	M	2800	mg/kg	0.10	9.0	7.0	16	25	12	16	10	9.2	2.7
Fluoranthene	M	2800	mg/kg	0.10	55	50	93	120	75	95	62	49	14
Pyrene	M	2800	mg/kg	0.10	37	34	62	80	51	64	41	34	9.7
Benzo[a]anthracene	M	2800	mg/kg	0.10	28	24	43	57	34	45	31	24	6.8
Chrysene	M	2800	mg/kg	0.10	27	23	41	52	33	43	30	24	6.6
Benzo[b]fluoranthene	M	2800	mg/kg	0.10	38	31	54	67	45	57	39	32	7.4
Benzo[k]fluoranthene	M	2800	mg/kg	0.10	13	10	18	24	15	20	13	9.6	3.0
Benzo[a]pyrene	M	2800	mg/kg	0.10	28	24	40	47	32	41	29	24	5.0
Indeno(1,2,3-c,d)Pyrene	M	2800	mg/kg	0.10	24	20	35	40	29	36	25	21	4.0
Dibenz(a,h)Anthracene	N	2800	mg/kg	0.10	5.0	3.7	7.3	8.4	5.7	6.9	5.0	4.1	1.5
Benzo[g,h,i]perylene	M	2800	mg/kg	0.10	19	15	27	30	22	28	19	17	3.4
Total Of 16 PAH's	N	2800	mg/kg	2.0	330	290	530	640	440	540	360	300	74
Resorcinol	M	2920	mg/kg	0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020
Phenol	M	2920	mg/kg	0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020
Cresols	M	2920	mg/kg	0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020
Xylenols	M	2920	mg/kg	0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020
1-Naphthol	N	2920	mg/kg	0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020
Trimethylphenols	M	2920	mg/kg	0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020
Total Phenols	M	2920	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10

Results - Soil

Project: P18-669

Client: Rodgers Leask Environmental		**Chemtest Job No.:**			22-02012	22-02012	22-02012	22-02012	22-02012	22-02012	22-02012	22-02012	22-02012
Quotation No.: Q21-24056		**Chemtest Sample ID.:**			1355707	1355708	1355709	1355710	1355711	1355712	1355713	1355714	1355715
Order No.: PO115623		Client Sample Ref.:			2BSE-54	2BSE-55	2BSE-56	2BSE-57	2BSE-58	2BSE-59	2BSE-60	2BSE-61	2BSE-62
		Sample Type:			SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
		Date Sampled:			19-Jan-2022	19-Jan-2022	19-Jan-2022	19-Jan-2022	19-Jan-2022	19-Jan-2022	19-Jan-2022	19-Jan-2022	19-Jan-2022
		Asbestos Lab:			DURHAM		DURHAM		DURHAM		DURHAM		DURHAM
Determinand	**Accred.**	**SOP**	**Units**	**LOD**									
ACM Type	U	2192		N/A	-		-		-		-		-
Asbestos Identification	U	2192		N/A	No Asbestos Detected		No Asbestos Detected		No Asbestos Detected		No Asbestos Detected		No Asbestos Detected
Moisture	N	2030	%	0.020	12	13	11	12	8.0	11	13	13	12
Soil Colour	N	2040		N/A	Black	Black	Brown	Black	Brown	Black	Brown	Black	Brown
Other Material	N	2040		N/A	Stones	Stones	Stones	Stones	Stones	Stones	Stones	Stones	Stones
Soil Texture	N	2040		N/A	Loam	Loam	Gravel	Loam	Loam	Gravel	Loam	Loam	Loam
pH	M	2010		4.0	10.7	10.8	11.0	10.8	10.7	11.2	10.7	10.6	10.8
Cyanide (Total)	M	2300	mg/kg	0.50	2.5	2.6	2.8	2.4	2.1	2.6	2.3	3.6	2.3
Ammoniacal Nitrogen	M	2425	mg/kg	0.50	1.0	1.5	0.93	0.86	1.0	1.4	2.2	2.8	1.8
Iron (Total)	N	2430	mg/kg	100	30000	31000	29000	29000	27000	29000	31000	31000	31000
Arsenic	M	2450	mg/kg	1.0	9.0	10	11	10	8.4	9.4	9.8	11	10
Cadmium	M	2450	mg/kg	0.10	1.7	1.7	1.3	1.6	1.2	1.6	1.7	2.1	1.9
Chromium	M	2450	mg/kg	1.0	180	190	180	200	140	180	130	160	190
Manganese	M	2450	mg/kg	5.0	11000	10000	15000	13000	8900	11000	10000	12000	8800
Copper	M	2450	mg/kg	0.50	20	21	20	21	19	19	23	20	21
Mercury	M	2450	mg/kg	0.10	0.31	0.34	0.33	0.39	0.29	0.30	0.31	0.34	0.39
Nickel	M	2450	mg/kg	0.50	22	25	22	23	19	21	24	25	23
Lead	M	2450	mg/kg	0.50	210	230	170	200	160	190	240	350	270
Selenium	M	2450	mg/kg	0.20	0.79	0.80	0.82	0.81	0.88	0.64	0.79	0.88	0.79
Vanadium	U	2450	mg/kg	5.0	250	240	370	290	180	260	270	270	270
Zinc	M	2450	mg/kg	0.50	450	470	350	440	370	380	440	530	460
Organic Matter	M	2625	%	0.40	29	22	31	24	28	28	29	21	34
Aliphatic TPH >C5-C6	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C6-C8	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C8-C10	M	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C10-C12	M	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C12-C16	M	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C16-C21	M	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	12	38	12	18	75
Aliphatic TPH >C21-C35	M	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C35-C44	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Total Aliphatic Hydrocarbons	N	2680	mg/kg	5.0	< 5.0	< 5.0	< 5.0	< 5.0	12	38	12	18	75
Aromatic TPH >C5-C7	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C7-C8	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C8-C10	M	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C10-C12	M	2680	mg/kg	1.0	17	< 1.0	11	< 1.0	17	33	14	19	22
Aromatic TPH >C12-C16	M	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C16-C21	U	2680	mg/kg	1.0	140	48	67	68	140	150	34	49	55

Results - Soil

Project: P18-669

Client: Rodgers Leask Environmental			**Chemtest Job No.:**		22-02012	22-02012	22-02012	22-02012	22-02012	22-02012	22-02012	22-02012	22-02012
Quotation No.: Q21-24056			**Chemtest Sample ID.:**		1355707	1355708	1355709	1355710	1355711	1355712	1355713	1355714	1355715
Order No.: PO115623			Client Sample Ref.:		2BSE-54	2BSE-55	2BSE-56	2BSE-57	2BSE-58	2BSE-59	2BSE-60	2BSE-61	2BSE-62
			Sample Type:		SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
			Date Sampled:		19-Jan-2022	19-Jan-2022	19-Jan-2022	19-Jan-2022	19-Jan-2022	19-Jan-2022	19-Jan-2022	19-Jan-2022	19-Jan-2022
			Asbestos Lab:		DURHAM		DURHAM		DURHAM		DURHAM		DURHAM
Determinand	**Accred.**	**SOP**	**Units**	**LOD**									
Aromatic TPH >C21-C35	M	2680	mg/kg	1.0	410	69	180	130	310	360	94	130	120
Aromatic TPH >C35-C44	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Total Aromatic Hydrocarbons	N	2680	mg/kg	5.0	570	120	260	200	460	540	140	190	190
Total Petroleum Hydrocarbons	N	2680	mg/kg	10.0	570	120	260	200	470	580	150	210	270
Benzene	M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Toluene	M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Ethylbenzene	M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
m & p-Xylene	M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
o-Xylene	M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Methyl Tert-Butyl Ether	M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Naphthalene	M	2800	mg/kg	0.10	16	14	9.6	14	9.1	21	15	20	22
Acenaphthylene	N	2800	mg/kg	0.10	5.0	6.0	3.9	4.8	3.6	3.0	2.2	4.4	3.5
Acenaphthene	M	2800	mg/kg	0.10	0.75	0.94	0.61	0.82	0.60	0.74	0.58	1.1	0.82
Fluorene	M	2800	mg/kg	0.10	3.1	6.2	3.3	3.7	2.8	2.4	2.0	5.1	3.4
Phenanthrene	M	2800	mg/kg	0.10	25	37	29	26	23	17	13	30	22
Anthracene	M	2800	mg/kg	0.10	9.1	11	9.9	8.6	7.8	5.5	4.8	7.0	5.7
Fluoranthene	M	2800	mg/kg	0.10	54	59	57	48	46	33	28	44	34
Pyrene	M	2800	mg/kg	0.10	37	40	40	33	33	23	21	30	24
Benzo[a]anthracene	M	2800	mg/kg	0.10	25	26	24	21	22	16	14	19	15
Chrysene	M	2800	mg/kg	0.10	24	26	24	22	21	16	14	18	14
Benzo[b]fluoranthene	M	2800	mg/kg	0.10	33	37	34	31	31	25	21	27	22
Benzo[k]fluoranthene	M	2800	mg/kg	0.10	11	15	13	13	13	8.7	9.1	10	8.7
Benzo[a]pyrene	M	2800	mg/kg	0.10	25	26	24	22	23	17	16	19	16
Indeno(1,2,3-c,d)Pyrene	M	2800	mg/kg	0.10	22	22	20	20	20	15	14	16	14
Dibenz(a,h)Anthracene	N	2800	mg/kg	0.10	3.9	6.3	3.9	6.1	5.9	2.9	4.9	3.3	3.3
Benzo[g,h,i]perylene	M	2800	mg/kg	0.10	17	18	16	17	16	12	12	13	11
Total Of 16 PAH's	N	2800	mg/kg	2.0	310	350	310	290	280	220	190	270	220
Resorcinol	M	2920	mg/kg	0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020
Phenol	M	2920	mg/kg	0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	0.097	0.20	0.18	0.26
Cresols	M	2920	mg/kg	0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020
Xylenols	M	2920	mg/kg	0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020
1-Naphthol	N	2920	mg/kg	0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020
Trimethylphenols	M	2920	mg/kg	0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020
Total Phenols	M	2920	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	0.20	0.18	0.26

Results - Soil

Project: P18-669

Client: Rodgers Leask Environmental		**Chemtest Job No.:**			22-02012	22-02012	22-02012	22-02012	22-02012	22-02012	22-02012	22-02012
Quotation No.: Q21-24056		**Chemtest Sample ID.:**			1355716	1355717	1355718	1355719	1355720	1355721	1355722	1355723
Order No.: PO115623		Client Sample Ref.:			2BSE-63	2BSE-64	2BSE-65	2BSE-66	2BSE-67	2BSE-68	2BSE-69	2BSE-70
		Sample Type:			SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
		Date Sampled:			19-Jan-2022	19-Jan-2022	19-Jan-2022	19-Jan-2022	19-Jan-2022	19-Jan-2022	19-Jan-2022	19-Jan-2022
		Asbestos Lab:				DURHAM		DURHAM		DURHAM		DURHAM
Determinand	**Accred.**	**SOP**	**Units**	**LOD**								
ACM Type	U	2192		N/A		-		-		-		-
Asbestos Identification	U	2192		N/A		No Asbestos Detected		No Asbestos Detected		No Asbestos Detected		No Asbestos Detected
Moisture	N	2030	%	0.020	12	12	12	13	8.5	11	14	12
Soil Colour	N	2040		N/A	Black	Black	Black	Black	Black	Black	Black	Black
Other Material	N	2040		N/A	Stones	Stones	Stones	Stones	Stones	Stones	Stones	Stones
Soil Texture	N	2040		N/A	Loam	Loam	Loam	Loam	Loam	Loam	Loam	Loam
pH	M	2010		4.0	10.8	11.2	11.0	10.8	11.6	11.0	11.2	11.1
Cyanide (Total)	M	2300	mg/kg	0.50	2.3	1.9	2.1	2.2	2.4	2.6	2.6	2.4
Ammoniacal Nitrogen	M	2425	mg/kg	0.50	1.9	1.7	2.4	2.1	1.2	1.0	1.9	1.6
Iron (Total)	N	2430	mg/kg	100	31000	31000	31000	31000	31000	29000	31000	30000
Arsenic	M	2450	mg/kg	1.0	10	10	11	9.7	10	13	11	9.7
Cadmium	M	2450	mg/kg	0.10	2.1	1.6	1.8	1.9	1.3	1.8	2.0	1.7
Chromium	M	2450	mg/kg	1.0	140	190	150	150	260	190	180	180
Manganese	M	2450	mg/kg	5.0	9200	12000	10000	9400	19000	13000	12000	13000
Copper	M	2450	mg/kg	0.50	20	19	20	22	23	44	23	20
Mercury	M	2450	mg/kg	0.10	0.33	0.37	0.35	0.35	0.50	0.38	0.36	0.34
Nickel	M	2450	mg/kg	0.50	25	22	24	24	24	23	27	22
Lead	M	2450	mg/kg	0.50	260	230	250	270	190	250	270	230
Selenium	M	2450	mg/kg	0.20	0.87	0.64	0.72	0.89	0.73	0.84	0.75	0.71
Vanadium	U	2450	mg/kg	5.0	210	290	270	230	400	260	260	320
Zinc	M	2450	mg/kg	0.50	490	400	460	480	330	540	500	440
Organic Matter	M	2625	%	0.40	31	28	34	38	14	38	29	45
Aliphatic TPH >C5-C6	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C6-C8	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C8-C10	M	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C10-C12	M	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C12-C16	M	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C16-C21	M	2680	mg/kg	1.0	50	15	< 1.0	< 1.0	15	< 1.0	35	< 1.0
Aliphatic TPH >C21-C35	M	2680	mg/kg	1.0	59	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C35-C44	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Total Aliphatic Hydrocarbons	N	2680	mg/kg	5.0	110	15	< 5.0	< 5.0	15	< 5.0	35	< 5.0
Aromatic TPH >C5-C7	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C7-C8	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C8-C10	M	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C10-C12	M	2680	mg/kg	1.0	40	< 1.0	14	< 1.0	15	< 1.0	23	11
Aromatic TPH >C12-C16	M	2680	mg/kg	1.0	220	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C16-C21	U	2680	mg/kg	1.0	1100	77	56	34	57	31	53	120

Results - Soil

Project: P18-669

Client: Rodgers Leask Environmental			**Chemtest Job No.:**		22-02012	22-02012	22-02012	22-02012	22-02012	22-02012	22-02012	22-02012
Quotation No.: Q21-24056			**Chemtest Sample ID.:**		1355716	1355717	1355718	1355719	1355720	1355721	1355722	1355723
Order No.: PO115623			Client Sample Ref.:		2BSE-63	2BSE-64	2BSE-65	2BSE-66	2BSE-67	2BSE-68	2BSE-69	2BSE-70
			Sample Type:		SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
			Date Sampled:		19-Jan-2022	19-Jan-2022	19-Jan-2022	19-Jan-2022	19-Jan-2022	19-Jan-2022	19-Jan-2022	19-Jan-2022
			Asbestos Lab:			DURHAM		DURHAM		DURHAM		DURHAM
Determinand	**Accred.**	**SOP**	**Units**	**LOD**								
Aromatic TPH >C21-C35	M	2680	mg/kg	1.0	1400	130	150	120	190	110	120	230
Aromatic TPH >C35-C44	N	2680	mg/kg	1.0	180	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Total Aromatic Hydrocarbons	N	2680	mg/kg	5.0	2900	210	220	150	260	150	200	370
Total Petroleum Hydrocarbons	N	2680	mg/kg	10.0	3100	230	220	150	280	150	230	370
Benzene	M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	4.7
Toluene	M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	2.9
Ethylbenzene	M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
m & p-Xylene	M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
o-Xylene	M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Methyl Tert-Butyl Ether	M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Naphthalene	M	2800	mg/kg	0.10	15	20	20	74	15	27	32	13
Acenaphthylene	N	2800	mg/kg	0.10	4.0	3.1	3.5	16	2.6	13	6.5	5.0
Acenaphthene	M	2800	mg/kg	0.10	0.76	0.76	0.81	3.4	0.64	1.6	1.2	0.89
Fluorene	M	2800	mg/kg	0.10	4.5	2.9	3.2	17	2.4	14	5.2	4.1
Phenanthrene	M	2800	mg/kg	0.10	28	17	23	130	14	100	31	30
Anthracene	M	2800	mg/kg	0.10	7.4	5.1	6.6	23	4.1	23	9.2	8.8
Fluoranthene	M	2800	mg/kg	0.10	46	29	36	120	24	120	52	54
Pyrene	M	2800	mg/kg	0.10	31	21	25	87	17	82	37	36
Benzo[a]anthracene	M	2800	mg/kg	0.10	18	13	16	38	11	40	22	23
Chrysene	M	2800	mg/kg	0.10	18	13	15	37	11	42	22	21
Benzo[b]fluoranthene	M	2800	mg/kg	0.10	26	20	24	49	16	50	31	30
Benzo[k]fluoranthene	M	2800	mg/kg	0.10	9.5	7.1	9.0	19	5.9	17	10	9.6
Benzo[a]pyrene	M	2800	mg/kg	0.10	18	14	17	34	11	38	23	23
Indeno(1,2,3-c,d)Pyrene	M	2800	mg/kg	0.10	15	12	15	36	9.5	32	21	19
Dibenz(a,h)Anthracene	N	2800	mg/kg	0.10	3.0	2.2	2.8	6.4	1.9	5.8	3.9	3.6
Benzo[g,h,i]perylene	M	2800	mg/kg	0.10	12	10	11	27	7.7	27	17	15
Total Of 16 PAH's	N	2800	mg/kg	2.0	260	190	230	720	150	630	320	300
Resorcinol	M	2920	mg/kg	0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020
Phenol	M	2920	mg/kg	0.020	0.19	0.22	0.20	0.27	0.15	0.12	0.18	0.082
Cresols	M	2920	mg/kg	0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020
Xylenols	M	2920	mg/kg	0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020
1-Naphthol	N	2920	mg/kg	0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020
Trimethylphenols	M	2920	mg/kg	0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020
Total Phenols	M	2920	mg/kg	0.10	0.19	0.22	0.20	0.27	0.15	0.12	0.18	< 0.10

Test Methods

SOP	Title	Parameters included	Method summary
2010	pH Value of Soils	pH	pH Meter
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <37°C.
2040	Soil Description(Requirement of MCERTS)	Soil description	As received soil is described based upon BS5930
2192	Asbestos	Asbestos	Polarised light microscopy / Gravimetry
2300	Cyanides & Thiocyanate in Soils	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Allkaline extraction followed by colorimetric determination using Automated Flow Injection Analyser.
2425	Extractable Ammonium in soils	Ammonium	Extraction with potassium chloride solution / analysis by 'Aquakem 600' Discrete Analyser using sodium salicylate and sodium dichloroisocyanurate.
2430	Total Sulphate in soils	Total Sulphate	Acid digestion followed by determination of sulphate in extract by ICP-OES.
2450	Acid Soluble Metals in Soils	Metals, including: Arsenic; Barium; Beryllium; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Vanadium; Zinc	Acid digestion followed by determination of metals in extract by ICP-MS.
2625	Total Organic Carbon in Soils	Total organic Carbon (TOC)	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.
2680	TPH A/A Split	Aliphatics: >C5–C6, >C6–C8,>C8–C10, >C10–C12, >C12–C16, >C16–C21, >C21–C35, >C35– C44Aromatics: >C5–C7, >C7–C8, >C8– C10, >C10–C12, >C12–C16, >C16– C21, >C21– C35, >C35– C44	Dichloromethane extraction / GCxGC FID detection
2760	Volatile Organic Compounds (VOCs) in Soils by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics.(cf. USEPA Method 8260)*please refer to UKAS schedule	Automated headspace gas chromatographic (GC) analysis of a soil sample, as received, with mass spectrometric (MS) detection of volatile organic compounds.
2800	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Soil by GC-MS	Acenaphthene*; Acenaphthylene; Anthracene*; Benzo[a]Anthracene*; Benzo[a]Pyrene*; Benzo[b]Fluoranthene*; Benzo[ghi]Perylene*; Benzo[k]Fluoranthene; Chrysene*; Dibenz[ah]Anthracene; Fluoranthene*; Fluorene*; Indeno[123cd]Pyrene*; Naphthalene*; Phenanthrene*; Pyrene*	Dichloromethane extraction / GC-MS
2920	Phenols in Soils by HPLC	Phenolic compounds including Resorcinol, Phenol, Methylphenols, Dimethylphenols, 1-Naphthol and TrimethylphenolsNote: chlorophenols are excluded.	60:40 methanol/water mixture extraction, followed by HPLC determination using electrochemical detection.

Report Information

Key

U	UKAS accredited
M	MCERTS and UKAS accredited
N	Unaccredited
S	This analysis has been subcontracted to a UKAS accredited laboratory that is accredited for this analysis
SN	This analysis has been subcontracted to a UKAS accredited laboratory that is not accredited for this analysis
T	This analysis has been subcontracted to an unaccredited laboratory
I/S	Insufficient Sample
U/S	Unsuitable Sample
N/E	not evaluated
<	"less than"
>	"greater than"
SOP	Standard operating procedure
LOD	Limit of detection

Comments or interpretations are beyond the scope of UKAS accreditation
The results relate only to the items tested
Uncertainty of measurement for the determinands tested are available upon request
None of the results in this report have been recovery corrected
All results are expressed on a dry weight basis

The following tests were analysed on samples as received and the results subsequently corrected to a dry weight basis TPH, BTEX, VOCs, SVOCs, PCBs, Phenols

For all other tests the samples were dried at < 37°C prior to analysis
All Asbestos testing is performed at the indicated laboratory
Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1

Sample Deviation Codes

A - Date of sampling not supplied
B - Sample age exceeds stability time (sampling to extraction)
C - Sample not received in appropriate containers
D - Broken Container
E - Insufficient Sample (Applies to LOI in Trommel Fines Only)

Sample Retention and Disposal

All soil samples will be retained for a period of 30 days from the date of receipt
All water samples will be retained for 14 days from the date of receipt
Charges may apply to extended sample storage

If you require extended retention of samples, please email your requirements to:
customerservices@chemtest.com

eurofins | Chemtest
Eurofins Chemtest Ltd
Depot Road
Newmarket
CB8 0AL
Tel: 01638 606070
Email: info@chemtest.com

Final Report

Report No.:	22-03239-1
Initial Date of Issue:	09-Feb-2022
Client	Rodgers Leask Environmental
Client Address:	Office 225 2430/2440 Aztec West Almoundsbury Bristol BS32 4AQ
Contact(s):	Chris Wilson David McCarroll
Project	P18-669
Quotation No.:	Q21-24056
Order No.:	PO115623
No. of Samples:	7
Turnaround (Wkdays):	10
Date Approved:	09-Feb-2022
Approved By:	
Details:	Stuart Henderson, Technical Manager

Date Received:	31-Jan-2022
Date Instructed:	31-Jan-2022
Results Due:	11-Feb-2022

Results - Soil

Project: P18-669

Client: Rodgers Leask Environmental		**Chemtest Job No.:**			22-03239	22-03239	22-03239	22-03239	22-03239
Quotation No.: Q21-24056		**Chemtest Sample ID.:**			1361665	1361666	1361667	1361668	1361669
		Client Sample ID.:			2BSE-71	2BSE-72	2BSE-73	2BSE-74	2BSE-75
		Sample Type:			SOIL	SOIL	SOIL	SOIL	SOIL
		Date Sampled:			27-Jan-2022	27-Jan-2022	27-Jan-2022	27-Jan-2022	27-Jan-2022
		Asbestos Lab:			DURHAM		DURHAM		DURHAM
Determinand	**Accred.**	**SOP**	**Units**	**LOD**					
ACM Type	U	2192		N/A	-		-		-
Asbestos Identification	U	2192		N/A	No Asbestos Detected		No Asbestos Detected		No Asbestos Detected
Moisture	N	2030	%	0.020	29	12	12	11	10
Soil Colour	N	2040		N/A	Black	Black	Black	Black	Black
Other Material	N	2040		N/A	Stones	Stones and Roots	Stones and Roots	Stones	Stones
Soil Texture	N	2040		N/A	Sand	Sand	Sand	Sand	Sand
pH	M	2010		4.0	10.5	10.5	10.6	10.3	11.1
Cyanide (Total)	M	2300	mg/kg	0.50	2.1	2.7	2.0	1.9	2.0
Ammoniacal Nitrogen	M	2425	mg/kg	0.50	2.6	0.86	2.5	3.7	0.67
Iron (Total)	N	2430	mg/kg	100	6200	25000	26000	25000	24000
Arsenic	M	2450	mg/kg	1.0	3.9	13	13	16	17
Cadmium	M	2450	mg/kg	0.10	0.22	2.1	2.4	2.9	1.9
Chromium	M	2450	mg/kg	1.0	4.2	240	170	190	320
Manganese	M	2450	mg/kg	5.0	38	11000	7900	9500	14000
Copper	M	2450	mg/kg	0.50	6.0	28	24	28	30
Mercury	M	2450	mg/kg	0.10	< 0.10	0.45	0.41	0.52	0.62
Nickel	M	2450	mg/kg	0.50	3.3	31	34	33	29
Lead	M	2450	mg/kg	0.50	81	230	340	380	250
Selenium	M	2450	mg/kg	0.20	0.99	0.71	0.61	0.77	0.50
Vanadium	U	2450	mg/kg	5.0	< 5.0	260	200	260	340
Zinc	M	2450	mg/kg	0.50	29	400	460	470	470
Organic Matter	M	2625	%	0.40	28	31	29	38	36
Aliphatic TPH >C5-C6	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C6-C8	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C8-C10	M	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C10-C12	M	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C12-C16	M	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C16-C21	M	2680	mg/kg	1.0	< 1.0	< 1.0	76	< 1.0	< 1.0
Aliphatic TPH >C21-C35	M	2680	mg/kg	1.0	< 1.0	< 1.0	180	160	< 1.0
Aliphatic TPH >C35-C44	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Total Aliphatic Hydrocarbons	N	2680	mg/kg	5.0	< 5.0	< 5.0	250	160	< 5.0
Aromatic TPH >C5-C7	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C7-C8	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C8-C10	M	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C10-C12	M	2680	mg/kg	1.0	< 1.0	< 1.0	20	16	< 1.0
Aromatic TPH >C12-C16	M	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C16-C21	U	2680	mg/kg	1.0	< 1.0	32	92	57	69

Results - Soil

Project: P18-669

Client: Rodgers Leask Environmental			**Chemtest Job No.:**		22-03239	22-03239	22-03239	22-03239	22-03239
Quotation No.: Q21-24056			**Chemtest Sample ID.:**		1361665	1361666	1361667	1361668	1361669
			Client Sample ID.:		2BSE-71	2BSE-72	2BSE-73	2BSE-74	2BSE-75
			Sample Type:		SOIL	SOIL	SOIL	SOIL	SOIL
			Date Sampled:		27-Jan-2022	27-Jan-2022	27-Jan-2022	27-Jan-2022	27-Jan-2022
			Asbestos Lab:		DURHAM		DURHAM		DURHAM
Determinand	**Accred.**	**SOP**	**Units**	**LOD**					
Aromatic TPH >C21-C35	M	2680	mg/kg	1.0	< 1.0	170	380	540	290
Aromatic TPH >C35-C44	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Total Aromatic Hydrocarbons	N	2680	mg/kg	5.0	< 5.0	200	490	610	360
Total Petroleum Hydrocarbons	N	2680	mg/kg	10.0	< 10	200	750	770	360
Benzene	M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Toluene	M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Ethylbenzene	M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
m & p-Xylene	M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
o-Xylene	M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Methyl Tert-Butyl Ether	M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Naphthalene	M	2800	mg/kg	0.10	21	34	15	20	24
Acenaphthylene	N	2800	mg/kg	0.10	3.7	5.0	4.5	3.5	3.4
Acenaphthene	M	2800	mg/kg	0.10	3.5	0.49	0.75	1.4	0.84
Fluorene	M	2800	mg/kg	0.10	7.3	3.5	3.2	3.3	2.8
Phenanthrene	M	2800	mg/kg	0.10	28	22	21	21	18
Anthracene	M	2800	mg/kg	0.10	9.5	7.9	10	6.9	5.8
Fluoranthene	M	2800	mg/kg	0.10	25	39	38	39	32
Pyrene	M	2800	mg/kg	0.10	20	28	28	29	23
Benzo[a]anthracene	M	2800	mg/kg	0.10	11	20	20	19	16
Chrysene	M	2800	mg/kg	0.10	10	19	17	18	15
Benzo[b]fluoranthene	M	2800	mg/kg	0.10	13	25	27	24	20
Benzo[k]fluoranthene	M	2800	mg/kg	0.10	4.9	9.4	9.1	8.3	7.7
Benzo[a]pyrene	M	2800	mg/kg	0.10	12	19	21	18	16
Indeno(1,2,3-c,d)Pyrene	M	2800	mg/kg	0.10	8.9	17	19	16	14
Dibenz(a,h)Anthracene	N	2800	mg/kg	0.10	1.3	3.0	2.9	2.5	2.1
Benzo[g,h,i]perylene	M	2800	mg/kg	0.10	6.0	13	13	13	9.4
Total Of 16 PAH's	N	2800	mg/kg	2.0	190	270	250	240	210
Resorcinol	M	2920	mg/kg	0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020
Phenol	M	2920	mg/kg	0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020
Cresols	M	2920	mg/kg	0.020	0.16	< 0.020	< 0.020	0.094	< 0.020
Xylenols	M	2920	mg/kg	0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020
1-Naphthol	N	2920	mg/kg	0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020
Trimethylphenols	M	2920	mg/kg	0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020
Total Phenols	M	2920	mg/kg	0.10	0.16	< 0.10	< 0.10	< 0.10	< 0.10

Results - Water

Project: P18-669

Client: Rodgers Leask Environmental			**Chemtest Job No.:**		22-03239	22-03239
Quotation No.: Q21-24056			**Chemtest Sample ID.:**		1361670	1361671
			Client Sample ID.:		D2-S	D5-C
			Sample Type:		WATER	WATER
			Date Sampled:		28-Jan-2022	28-Jan-2022
Determinand	**Accred.**	**SOP**	**Units**	**LOD**		
pH	U	1010		N/A	8.2	8.3
Electrical Conductivity	U	1020	µS/cm	1.0	840	860
Suspended Solids At 105C	U	1030	mg/l	5.0	18	12
Total Dissolved Solids	N	1020	mg/l	1.0	550	560
Turbidity	N	1060	NTU	1.0	3.9	2.7
Biochemical Oxygen Demand	N	1090	mg O2/l	4.0	[B] < 4.0	[B] < 4.0
Chemical Oxygen Demand	U	1100	mg O2/l	10	30	30
Dissolved Oxygen	N	1150	mg O2/l	0.50	7.8	8.0
Redox Potential	N	1170	mV	N/A	20	2.7
Chloride	U	1220	mg/l	1.0	58	79
Fluoride	U	1220	mg/l	0.050	0.90	0.13
Ammoniacal Nitrogen	U	1220	mg/l	0.050	3.4	0.11
Phosphorus (Total)	N	1220	mg/l	0.020	< 0.020	0.063
Phosphate	U	1220	mg/l	0.200	< 0.20	< 0.20
Phosphorus (Dissolved)	U	1220	mg/l	0.020	< 0.020	0.062
Sulphur	N	1220	mg/l	1.0	90	22
Sulphate	U	1220	mg/l	1.0	270	66
Cyanide (Total)	U	1300	mg/l	0.050	0.070	0.15
Cyanide (Free)	U	1300	mg/l	0.050	< 0.050	< 0.050
Thiocyanate	U	1300	mg/l	0.50	< 0.50	< 0.50
Cyanide (Complex)	U	1300	mg/l	0.050	0.070	0.12
Sulphide	U	1325	mg/l	0.050	[B] < 0.050	[B] < 0.050
Calcium	U	1455	mg/l	2.00	64	84
Magnesium	U	1455	mg/l	0.20	5.1	2.0
Total Calcium	N	1455	mg/l	5.0	67	85
Total Magnesium	N	1455	mg/l	0.50	5.2	2.0
Total Hardness as CaCO3	U	1270	mg/l	15	180	220
Arsenic (Dissolved)	U	1455	µg/l	0.20	2.8	4.1
Boron (Dissolved)	U	1455	µg/l	10.0	110	130
Barium (Dissolved)	U	1455	µg/l	5.00	39	47
Beryllium (Dissolved)	U	1455	µg/l	1.00	< 1.0	< 1.0
Cadmium (Dissolved)	U	1455	µg/l	0.11	< 0.11	< 0.11
Chromium (Dissolved)	U	1455	µg/l	0.50	6.9	6.3
Copper (Dissolved)	U	1455	µg/l	0.50	4.6	2.8
Iron (Dissolved)	N	1455	µg/l	5.0	16	88
Mercury (Dissolved)	U	1455	µg/l	0.05	< 0.05	< 0.05
Manganese (Dissolved)	U	1455	µg/l	0.50	27	6.1
Nickel (Dissolved)	U	1455	µg/l	0.50	2.5	2.8
Lead (Dissolved)	U	1455	µg/l	0.50	< 0.50	< 0.50
Antimony (Dissolved)	U	1455	µg/l	0.50	0.61	1.3

Results - Water

Project: P18-669

Client: Rodgers Leask Environmental			**Chemtest Job No.:**		22-03239	22-03239
Quotation No.: Q21-24056			**Chemtest Sample ID.:**		1361670	1361671
			Client Sample ID.:		D2-S	D5-C
			Sample Type:		WATER	WATER
			Date Sampled:		28-Jan-2022	28-Jan-2022
Determinand	**Accred.**	**SOP**	**Units**	**LOD**		
Selenium (Dissolved)	U	1455	µg/l	0.50	2.4	1.9
Vanadium (Dissolved)	U	1455	µg/l	0.50	33	29
Zinc (Dissolved)	U	1455	µg/l	2.5	< 2.5	< 2.5
Arsenic (Total)	N	1455	µg/l	0.20	2.8	4.2
Boron (Total)	N	1455	µg/l	10.0	110	130
Barium (Total)	N	1455	µg/l	5.00	39	48
Beryllium (Total)	N	1455	µg/l	1.00	< 1.0	< 1.0
Cadmium (Total)	N	1455	µg/l	0.11	< 0.11	< 0.11
Chromium (Total)	N	1455	µg/l	0.50	7.1	6.3
Copper (Total)	N	1455	µg/l	0.50	4.6	2.8
Iron (Total)	N	1455	µg/l	5.0	17	88
Mercury (Total)	N	1455	µg/l	0.05	< 0.05	< 0.05
Manganese (Total)	N	1455	µg/l	0.50	28	6.1
Nickel (Total)	N	1455	µg/l	0.50	2.5	3.0
Lead (Total)	N	1455	µg/l	0.50	< 0.50	< 0.50
Antimony (Total)	N	1455	µg/l	0.50	0.61	1.3
Selenium (Total)	N	1455	µg/l	0.50	2.5	2.4
Vanadium (Total)	N	1455	µg/l	0.50	34	29
Zinc (Total)	N	1455	µg/l	2.5	< 2.5	< 2.5
Chromium (Hexavalent)	U	1490	µg/l	20	< 20	< 20
Dissolved Organic Carbon	U	1610	mg/l	2.0	20	18
Total Inorganic Carbon	N	1220	mg/l	2.5	16	53
Total Organic Carbon	U	1610	mg/l	2.0	19	18
Aliphatic TPH >C5-C6	N	1675	µg/l	0.10	< 0.10	< 0.10
Aliphatic TPH >C6-C8	N	1675	µg/l	0.10	< 0.10	< 0.10
Aliphatic TPH >C8-C10	N	1675	µg/l	0.10	< 0.10	< 0.10
Aliphatic TPH >C10-C12	N	1675	µg/l	0.10	< 0.10	< 0.10
Aliphatic TPH >C12-C16	N	1675	µg/l	0.10	< 0.10	< 0.10
Aliphatic TPH >C16-C21	N	1675	µg/l	0.10	< 0.10	< 0.10
Aliphatic TPH >C21-C35	N	1675	µg/l	0.10	< 0.10	< 0.10
Aliphatic TPH >C35-C44	N	1675	µg/l	0.10	< 0.10	< 0.10
Total Aliphatic Hydrocarbons	N	1675	µg/l	5.0	< 5.0	< 5.0
Aromatic TPH >C5-C7	N	1675	µg/l	0.10	< 0.10	< 0.10
Aromatic TPH >C7-C8	N	1675	µg/l	0.10	< 0.10	< 0.10
Aromatic TPH >C8-C10	N	1675	µg/l	0.10	< 0.10	< 0.10
Aromatic TPH >C10-C12	N	1675	µg/l	0.10	< 0.10	< 0.10
Aromatic TPH >C12-C16	N	1675	µg/l	0.10	< 0.10	< 0.10
Aromatic TPH >C16-C21	N	1675	µg/l	0.10	< 0.10	< 0.10
Aromatic TPH >C21-C35	N	1675	µg/l	0.10	< 0.10	< 0.10
Aromatic TPH >C35-C44	N	1675	µg/l	0.10	< 0.10	< 0.10

Results - Water

Project: P18-669

Client: Rodgers Leask Environmental			**Chemtest Job No.:**		22-03239	22-03239
Quotation No.: Q21-24056			**Chemtest Sample ID.:**		1361670	1361671
			Client Sample ID.:		D2-S	D5-C
			Sample Type:		WATER	WATER
			Date Sampled:		28-Jan-2022	28-Jan-2022
Determinand	**Accred.**	**SOP**	**Units**	**LOD**		
Total Aromatic Hydrocarbons	N	1675	µg/l	5.0	< 5.0	< 5.0
Total Petroleum Hydrocarbons	N	1675	µg/l	10	< 10	< 10
Dichlorodifluoromethane	U	1760	µg/l	1.0	< 1.0	< 1.0
Chloromethane	U	1760	µg/l	1.0	< 1.0	< 1.0
Vinyl Chloride	N	1760	µg/l	1.0	< 1.0	< 1.0
Bromomethane	U	1760	µg/l	5	< 5	< 5
Chloroethane	U	1760	µg/l	2.0	< 2.0	< 2.0
Trichlorofluoromethane	U	1760	µg/l	1.0	< 1.0	< 1.0
1,1-Dichloroethene	U	1760	µg/l	1.0	< 1.0	< 1.0
Trans 1,2-Dichloroethene	U	1760	µg/l	1.0	< 1.0	< 1.0
1,1-Dichloroethane	U	1760	µg/l	1.0	< 1.0	< 1.0
cis 1,2-Dichloroethene	U	1760	µg/l	1.0	< 1.0	< 1.0
Bromochloromethane	U	1760	µg/l	5	< 5	< 5
Trichloromethane	U	1760	µg/l	1.0	< 1.0	< 1.0
1,1,1-Trichloroethane	U	1760	µg/l	1.0	< 1.0	< 1.0
Tetrachloromethane	U	1760	µg/l	1.0	< 1.0	< 1.0
1,1-Dichloropropene	U	1760	µg/l	1.0	< 1.0	< 1.0
Benzene	U	1760	µg/l	1.0	< 1.0	< 1.0
1,2-Dichloroethane	U	1760	µg/l	2.0	< 2.0	< 2.0
Trichloroethene	N	1760	µg/l	1.0	< 1.0	< 1.0
1,2-Dichloropropane	U	1760	µg/l	1.0	< 1.0	< 1.0
Dibromomethane	U	1760	µg/l	10	< 10	< 10
Bromodichloromethane	U	1760	µg/l	5	< 5	< 5
cis-1,3-Dichloropropene	N	1760	µg/l	10	< 10	< 10
Toluene	U	1760	µg/l	1.0	< 1.0	< 1.0
Trans-1,3-Dichloropropene	N	1760	µg/l	10	< 10	< 10
1,1,2-Trichloroethane	U	1760	µg/l	10	< 10	< 10
Tetrachloroethene	U	1760	µg/l	1.0	< 1.0	< 1.0
1,3-Dichloropropane	U	1760	µg/l	2.0	< 2.0	< 2.0
Dibromochloromethane	U	1760	µg/l	10	< 10	< 10
1,2-Dibromoethane	U	1760	µg/l	5	< 5	< 5
Chlorobenzene	N	1760	µg/l	1.0	< 1.0	< 1.0
1,1,1,2-Tetrachloroethane	U	1760	µg/l	2.0	< 2.0	< 2.0
Ethylbenzene	U	1760	µg/l	1.0	< 1.0	< 1.0
m & p-Xylene	U	1760	µg/l	1.0	< 1.0	< 1.0
o-Xylene	U	1760	µg/l	1.0	< 1.0	< 1.0
Styrene	U	1760	µg/l	1.0	< 1.0	< 1.0
Tribromomethane	U	1760	µg/l	1.0	< 1.0	< 1.0
Isopropylbenzene	U	1760	µg/l	1.0	< 1.0	< 1.0
Bromobenzene	U	1760	µg/l	1.0	< 1.0	< 1.0

Results - Water

Project: P18-669

Client: Rodgers Leask Environmental			**Chemtest Job No.:**		22-03239	22-03239
Quotation No.: Q21-24056			**Chemtest Sample ID.:**		1361670	1361671
			Client Sample ID.:		D2-S	D5-C
			Sample Type:		WATER	WATER
			Date Sampled:		28-Jan-2022	28-Jan-2022
Determinand	**Accred.**	**SOP**	**Units**	**LOD**		
1,2,3-Trichloropropane	N	1760	µg/l	50	< 50	< 50
N-Propylbenzene	U	1760	µg/l	1.0	< 1.0	< 1.0
2-Chlorotoluene	U	1760	µg/l	1.0	< 1.0	< 1.0
1,3,5-Trimethylbenzene	U	1760	µg/l	1.0	< 1.0	< 1.0
4-Chlorotoluene	U	1760	µg/l	1.0	< 1.0	< 1.0
Tert-Butylbenzene	U	1760	µg/l	1.0	< 1.0	< 1.0
1,2,4-Trimethylbenzene	U	1760	µg/l	1.0	< 1.0	< 1.0
Sec-Butylbenzene	U	1760	µg/l	1.0	< 1.0	< 1.0
1,3-Dichlorobenzene	N	1760	µg/l	1.0	< 1.0	< 1.0
4-Isopropyltoluene	U	1760	µg/l	1.0	< 1.0	< 1.0
1,4-Dichlorobenzene	U	1760	µg/l	1.0	< 1.0	< 1.0
N-Butylbenzene	U	1760	µg/l	1.0	< 1.0	< 1.0
1,2-Dichlorobenzene	U	1760	µg/l	1.0	< 1.0	< 1.0
1,2-Dibromo-3-Chloropropane	U	1760	µg/l	50	< 50	< 50
1,2,4-Trichlorobenzene	U	1760	µg/l	1.0	< 1.0	< 1.0
Hexachlorobutadiene	U	1760	µg/l	1.0	< 1.0	< 1.0
1,2,3-Trichlorobenzene	U	1760	µg/l	2.0	< 2.0	< 2.0
Methyl Tert-Butyl Ether	N	1760	µg/l	1.0	< 1.0	< 1.0
N-Nitrosodimethylamine	N	1790	µg/l	0.50	< 0.50	< 0.50
Phenol	N	1790	µg/l	0.50	< 0.50	< 0.50
2-Chlorophenol	N	1790	µg/l	0.50	< 0.50	< 0.50
Bis-(2-Chloroethyl)Ether	N	1790	µg/l	0.50	< 0.50	< 0.50
1,3-Dichlorobenzene	N	1790	µg/l	0.50	< 0.50	< 0.50
1,4-Dichlorobenzene	N	1790	µg/l	0.50	< 0.50	< 0.50
1,2-Dichlorobenzene	N	1790	µg/l	0.50	< 0.50	< 0.50
2-Methylphenol (o-Cresol)	N	1790	µg/l	0.50	< 0.50	< 0.50
Bis(2-Chloroisopropyl)Ether	N	1790	µg/l	0.50	< 0.50	< 0.50
Hexachloroethane	N	1790	µg/l	0.50	< 0.50	< 0.50
N-Nitrosodi-n-propylamine	N	1790	µg/l	0.50	< 0.50	< 0.50
4-Methylphenol	N	1790	µg/l	0.50	< 0.50	< 0.50
Nitrobenzene	N	1790	µg/l	0.50	< 0.50	< 0.50
Isophorone	N	1790	µg/l	0.50	< 0.50	< 0.50
2-Nitrophenol	N	1790	µg/l	0.50	< 0.50	< 0.50
2,4-Dimethylphenol	N	1790	µg/l	0.50	< 0.50	< 0.50
Bis(2-Chloroethoxy)Methane	N	1790	µg/l	0.50	< 0.50	< 0.50
2,4-Dichlorophenol	N	1790	µg/l	0.50	< 0.50	< 0.50
1,2,4-Trichlorobenzene	N	1790	µg/l	0.50	< 0.50	< 0.50
Naphthalene	N	1790	µg/l	0.50	< 0.50	< 0.50
4-Chloroaniline	N	1790	µg/l	0.50	< 0.50	< 0.50
Hexachlorobutadiene	N	1790	µg/l	0.50	< 0.50	< 0.50

Results - Water

Project: P18-669

Client: Rodgers Leask Environmental			**Chemtest Job No.:**		22-03239	22-03239
Quotation No.: Q21-24056			**Chemtest Sample ID.:**		1361670	1361671
			Client Sample ID.:		D2-S	D5-C
			Sample Type:		WATER	WATER
			Date Sampled:		28-Jan-2022	28-Jan-2022
Determinand	**Accred.**	**SOP**	**Units**	**LOD**		
4-Chloro-3-Methylphenol	N	1790	µg/l	0.50	< 0.50	< 0.50
2-Methylnaphthalene	N	1790	µg/l	0.50	< 0.50	< 0.50
Hexachlorocyclopentadiene	N	1790	µg/l	0.50	< 0.50	< 0.50
2,4,6-Trichlorophenol	N	1790	µg/l	0.50	< 0.50	< 0.50
2,4,5-Trichlorophenol	N	1790	µg/l	0.50	< 0.50	< 0.50
2-Chloronaphthalene	N	1790	µg/l	0.50	< 0.50	< 0.50
2-Nitroaniline	N	1790	µg/l	0.50	< 0.50	< 0.50
Acenaphthylene	N	1790	µg/l	0.50	< 0.50	< 0.50
Dimethylphthalate	N	1790	µg/l	0.50	< 0.50	< 0.50
2,6-Dinitrotoluene	N	1790	µg/l	0.50	< 0.50	< 0.50
Acenaphthene	N	1790	µg/l	0.50	< 0.50	< 0.50
3-Nitroaniline	N	1790	µg/l	0.50	< 0.50	< 0.50
Dibenzofuran	N	1790	µg/l	0.50	< 0.50	< 0.50
4-Chlorophenylphenylether	N	1790	µg/l	0.50	< 0.50	< 0.50
2,4-Dinitrotoluene	N	1790	µg/l	0.50	< 0.50	< 0.50
Fluorene	N	1790	µg/l	0.50	< 0.50	< 0.50
Diethyl Phthalate	N	1790	µg/l	0.50	< 0.50	< 0.50
4-Nitroaniline	N	1790	µg/l	0.50	< 0.50	< 0.50
2-Methyl-4,6-Dinitrophenol	N	1790	µg/l	0.50	< 0.50	< 0.50
Azobenzene	N	1790	µg/l	0.50	< 0.50	< 0.50
4-Bromophenylphenyl Ether	N	1790	µg/l	0.50	< 0.50	< 0.50
Hexachlorobenzene	N	1790	µg/l	0.50	< 0.50	< 0.50
Pentachlorophenol	N	1790	µg/l	0.50	< 0.50	< 0.50
Phenanthrene	N	1790	µg/l	0.50	< 0.50	< 0.50
Anthracene	N	1790	µg/l	0.50	< 0.50	< 0.50
Carbazole	N	1790	µg/l	0.50	< 0.50	< 0.50
Di-N-Butyl Phthalate	N	1790	µg/l	0.50	< 0.50	< 0.50
Fluoranthene	N	1790	µg/l	0.50	< 0.50	< 0.50
Pyrene	N	1790	µg/l	0.50	< 0.50	< 0.50
Butylbenzyl Phthalate	N	1790	µg/l	0.50	< 0.50	< 0.50
Benzo[a]anthracene	N	1790	µg/l	0.50	< 0.50	< 0.50
Chrysene	N	1790	µg/l	0.50	< 0.50	< 0.50
Bis(2-Ethylhexyl)Phthalate	N	1790	µg/l	0.50	< 0.50	< 0.50
Di-N-Octyl Phthalate	N	1790	µg/l	0.50	< 0.50	< 0.50
Benzo[b]fluoranthene	N	1790	µg/l	0.50	< 0.50	< 0.50
Benzo[k]fluoranthene	N	1790	µg/l	0.50	< 0.50	< 0.50
Benzo[a]pyrene	N	1790	µg/l	0.50	< 0.50	< 0.50
Indeno(1,2,3-c,d)Pyrene	N	1790	µg/l	0.50	< 0.50	< 0.50
Dibenz(a,h)Anthracene	N	1790	µg/l	0.50	< 0.50	< 0.50
Benzo[g,h,i]perylene	N	1790	µg/l	0.50	< 0.50	< 0.50

Results - Water

Project: P18-669

Client: Rodgers Leask Environmental			**Chemtest Job No.:**		22-03239	22-03239
Quotation No.: Q21-24056			**Chemtest Sample ID.:**		1361670	1361671
			Client Sample ID.:		D2-S	D5-C
			Sample Type:		WATER	WATER
			Date Sampled:		28-Jan-2022	28-Jan-2022
Determinand	**Accred.**	**SOP**	**Units**	**LOD**		
4-Nitrophenol	N	1790	µg/l	0.50	< 0.50	< 0.50
Naphthalene	U	1800	µg/l	0.10	< 0.10	< 0.10
Acenaphthylene	U	1800	µg/l	0.10	< 0.10	< 0.10
Acenaphthene	U	1800	µg/l	0.10	< 0.10	< 0.10
Fluorene	U	1800	µg/l	0.10	< 0.10	< 0.10
Phenanthrene	U	1800	µg/l	0.10	< 0.10	< 0.10
Anthracene	U	1800	µg/l	0.10	< 0.10	< 0.10
Fluoranthene	U	1800	µg/l	0.10	< 0.10	< 0.10
Pyrene	U	1800	µg/l	0.10	< 0.10	< 0.10
Benzo[a]anthracene	U	1800	µg/l	0.10	< 0.10	< 0.10
Chrysene	U	1800	µg/l	0.10	< 0.10	< 0.10
Benzo[b]fluoranthene	U	1800	µg/l	0.10	< 0.10	< 0.10
Benzo[k]fluoranthene	U	1800	µg/l	0.10	< 0.10	< 0.10
Benzo[a]pyrene	U	1800	µg/l	0.10	< 0.10	< 0.10
Indeno(1,2,3-c,d)Pyrene	U	1800	µg/l	0.10	< 0.10	< 0.10
Dibenz(a,h)Anthracene	U	1800	µg/l	0.10	< 0.10	< 0.10
Benzo[g,h,i]perylene	U	1800	µg/l	0.10	< 0.10	< 0.10
Total Of 16 PAH's	U	1800	µg/l	2.0	< 2.0	< 2.0
Total Phenols	U	1920	mg/l	0.030	< 0.030	< 0.030

Deviations

In accordance with UKAS Policy on Deviating Samples TPS 63. Chemtest have a procedure to ensure 'upon receipt of each sample a competent laboratory shall assess whether the sample is suitable with regard to the requested test(s)'. This policy and the respective holding times applied, can be supplied upon request.The reason a sample is declared as deviating is detailed below. Where applicable the analysis remains UKAS/MCERTs accredited but the results may be compromised.

Sample:	Sample Ref:	Sample ID:	Sample Location:	Sampled Date:	Deviation Code(s):	Containers Received:
1361670		D2-S		28-Jan-2022	B	Coloured Winchester 1000ml
1361670		D2-S		28-Jan-2022	B	EPA Vial 40ml
1361670		D2-S		28-Jan-2022	B	Plastic Bottle 1000ml
1361671		D5-C		28-Jan-2022	B	Coloured Winchester 1000ml
1361671		D5-C		28-Jan-2022	B	EPA Vial 40ml
1361671		D5-C		28-Jan-2022	B	Plastic Bottle 1000ml

Test Methods

SOP	Title	Parameters included	Method summary
1010	pH Value of Waters	pH	pH Meter
1020	Electrical Conductivity and Total Dissolved Solids (TDS) in Waters	Electrical Conductivity and Total Dissolved Solids (TDS) in Waters	Conductivity Meter
1030	Total Suspended Solids	Total suspended solids	Filtration of a mixed sample through a standard glass fibre filter and determination of the mass of residue retained dried at 105°C.
1060	Turbidity	Turbidity	Spetctrophotometry
1090	Biochemical Oxygen Demand	Biochemical Oxygen demand (BOD)	Colorimetric determination of dissolved oxygen in seeded sample after 5 days incubation at 20°C.
1100	Chemical Oxygen Demand	Chemical Oxygen demand (COD)	Dichromate oxidation of organic matter in sample followed by colorimetric determination of residual Cr[VI].
1150	Dissolved Oxygen	Dissolved Oxygen (DO)	Electrometric determination (on site preferred), using oxygen sensitive membrane electrode.
1170	Redox Potential	Redox Potential	Meter
1220	Anions, Alkalinity & Ammonium in Waters	Fluoride; Chloride; Nitrite; Nitrate; Total; Oxidisable Nitrogen (TON); Sulfate; Phosphate; Alkalinity; Ammonium	Automated colorimetric analysis using 'Aquakem 600' Discrete Analyser.
1270	Total Hardness of Waters	Total hardness	Calculation applied to calcium and magnesium results, expressed as mg l-1 CaCO3 equivalent.
1300	Cyanides & Thiocyanate in Waters	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Continuous Flow Analysis.
1325	Sulphide in Waters	Sulphides	Automated colorimetric analysis by 'Aquakem 600' Discrete Analyser using N,N–dimethyl-pphenylenediamine.
1455	Metals in Waters by ICP-MS	Metals, including: Antimony; Arsenic; Barium; Beryllium; Boron; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Tin; Vanadium; Zinc	Filtration of samples followed by direct determination by inductively coupled plasma mass spectrometry (ICP-MS).
1490	Hexavalent Chromium in Waters	Chromium [VI]	Automated colorimetric analysis by 'Aquakem 600' Discrete Analyser using 1,5-diphenylcarbazide.
1610	Total/Dissolved Organic Carbon in Waters	Organic Carbon	TOC Analyser using Catalytic Oxidation
1675	TPH Aliphatic/Aromatic split in Waters by GC-FID(cf. Texas Method 1006 / TPH CWG)	Aliphatics: >C5–C6, >C6–C8, >C8– C10, >C10–C12, >C12–C16, >C16–C21, >C21–C35, >C35– C44Aromatics: >C5–C7, >C7–C8, >C8– C10, >C10–C12, >C12–C16, >C16– C21, >C21– C35, >C35– C44	Pentane extraction / GCxGC FID detection
1760	Volatile Organic Compounds (VOCs) in Waters by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics. (cf. USEPA Method 8260)	Automated headspace gas chromatographic (GC) analysis of water samples with mass spectrometric (MS) detection of volatile organic compounds.
1790	Semi-Volatile Organic Compounds (SVOCs) in Waters by GC-MS	Semi-volatile organic compounds	Solvent extraction / GCMS detection
1800	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Waters by GC-MS	Acenaphthene; Acenaphthylene; Anthracene; Benzo[a]Anthracene; Benzo[a]Pyrene; Benzo[b]Fluoranthene; Benzo[ghi]Perylene; Benzo[k]Fluoranthene; Chrysene; Dibenz[ah]Anthracene; Fluoranthene; Fluorene; Indeno[123cd]Pyrene; Naphthalene; Phenanthrene; Pyrene	Pentane extraction / GCMS detection
1920	Phenols in Waters by HPLC	Phenolic compounds including: Phenol, Cresols, Xylenols, Trimethylphenols Note: Chlorophenols are excluded.	Determination by High Performance Liquid Chromatography (HPLC) using electrochemical detection.

Test Methods

SOP	Title	Parameters included	Method summary
2010	pH Value of Soils	pH	pH Meter
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <37°C.
2040	Soil Description(Requirement of MCERTS)	Soil description	As received soil is described based upon BS5930
2192	Asbestos	Asbestos	Polarised light microscopy / Gravimetry
2300	Cyanides & Thiocyanate in Soils	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Allkaline extraction followed by colorimetric determination using Automated Flow Injection Analyser.
2425	Extractable Ammonium in soils	Ammonium	Extraction with potassium chloride solution / analysis by 'Aquakem 600' Discrete Analyser using sodium salicylate and sodium dichloroisocyanurate.
2430	Total Sulphate in soils	Total Sulphate	Acid digestion followed by determination of sulphate in extract by ICP-OES.
2450	Acid Soluble Metals in Soils	Metals, including: Arsenic; Barium; Beryllium; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Vanadium; Zinc	Acid digestion followed by determination of metals in extract by ICP-MS.
2625	Total Organic Carbon in Soils	Total organic Carbon (TOC)	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.
2680	TPH A/A Split	Aliphatics: >C5–C6, >C6–C8,>C8–C10, >C10–C12, >C12–C16, >C16–C21, >C21–C35, >C35– C44Aromatics: >C5–C7, >C7–C8, >C8– C10, >C10–C12, >C12–C16, >C16– C21, >C21– C35, >C35– C44	Dichloromethane extraction / GCxGC FID detection
2760	Volatile Organic Compounds (VOCs) in Soils by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics.(cf. USEPA Method 8260)*please refer to UKAS schedule	Automated headspace gas chromatographic (GC) analysis of a soil sample, as received, with mass spectrometric (MS) detection of volatile organic compounds.
2800	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Soil by GC-MS	Acenaphthene*; Acenaphthylene; Anthracene*; Benzo[a]Anthracene*; Benzo[a]Pyrene*; Benzo[b]Fluoranthene*; Benzo[ghi]Perylene*; Benzo[k]Fluoranthene; Chrysene*; Dibenz[ah]Anthracene; Fluoranthene*; Fluorene*; Indeno[123cd]Pyrene*; Naphthalene*; Phenanthrene*; Pyrene*	Dichloromethane extraction / GC-MS
2920	Phenols in Soils by HPLC	Phenolic compounds including Resorcinol, Phenol, Methylphenols, Dimethylphenols, 1-Naphthol and TrimethylphenolsNote: chlorophenols are excluded.	60:40 methanol/water mixture extraction, followed by HPLC determination using electrochemical detection.

Report Information

Key

U	UKAS accredited
M	MCERTS and UKAS accredited
N	Unaccredited
S	This analysis has been subcontracted to a UKAS accredited laboratory that is accredited for this analysis
SN	This analysis has been subcontracted to a UKAS accredited laboratory that is not accredited for this analysis
T	This analysis has been subcontracted to an unaccredited laboratory
I/S	Insufficient Sample
U/S	Unsuitable Sample
N/E	not evaluated
<	"less than"
>	"greater than"
SOP	Standard operating procedure
LOD	Limit of detection

Comments or interpretations are beyond the scope of UKAS accreditation
The results relate only to the items tested
Uncertainty of measurement for the determinands tested are available upon request
None of the results in this report have been recovery corrected
All results are expressed on a dry weight basis

The following tests were analysed on samples as received and the results subsequently corrected to a dry weight basis TPH, BTEX, VOCs, SVOCs, PCBs, Phenols

For all other tests the samples were dried at < 37°C prior to analysis
All Asbestos testing is performed at the indicated laboratory
Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1

Sample Deviation Codes

A - Date of sampling not supplied
B - Sample age exceeds stability time (sampling to extraction)
C - Sample not received in appropriate containers
D - Broken Container
E - Insufficient Sample (Applies to LOI in Trommel Fines Only)

Sample Retention and Disposal

All soil samples will be retained for a period of 30 days from the date of receipt
All water samples will be retained for 14 days from the date of receipt
Charges may apply to extended sample storage

If you require extended retention of samples, please email your requirements to:
customerservices@chemtest.com

Eurofins Chemtest Ltd
Depot Road
Newmarket
CB8 0AL
Tel: 01638 606070
Email: info@chemtest.com

Final Report

Report No.:	22-03631-1
Initial Date of Issue:	11-Feb-2022
Client	Rodgers Leask Environmental
Client Address:	Office 225 2430/2440 Aztec West Almoundsbury Bristol BS32 4AQ
Contact(s):	Chris Wilson David McCarroll
Project	P18-669
Quotation No.:	Q21-24056
Order No.:	PO115623
No. of Samples:	11
Turnaround (Wkdays):	10
Date Approved:	11-Feb-2022
Approved By:	

Date Received:	02-Feb-2022
Date Instructed:	02-Feb-2022
Results Due:	15-Feb-2022

Details: Stuart Henderson, Technical Manager

Results - Soil

Project: P18-669

Client: Rodgers Leask Environmental		**Chemtest Job No.:**			22-03631	22-03631	22-03631	22-03631	22-03631	22-03631	22-03631	22-03631	22-03631
Quotation No.: Q21-24056		**Chemtest Sample ID.:**			1363661	1363662	1363663	1363664	1363665	1363666	1363667	1363668	1363669
		Sample Location:			2BSE-76	2BSE-77	2BSE-78	2BSE-79	2BSE-80	2BSE-81	2BSE-82	2BSE-83	2BSE-84
		Sample Type:			SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
		Top Depth (m):			1.50	1.00	1.00	0.20	0.50	1.00	1.00	0.50	2.50
		Bottom Depth (m):			1.50	1.00	1.00	0.20	0.50	1.00	1.00	0.50	2.50
		Date Sampled:			31-Jan-2022	31-Jan-2022	31-Jan-2022	31-Jan-2022	31-Jan-2022	31-Jan-2022	31-Jan-2022	31-Jan-2022	31-Jan-2022
		Asbestos Lab:			NEW-ASB		NEW-ASB		NEW-ASB		NEW-ASB		NEW-ASB
Determinand	**Accred.**	**SOP**	**Units**	**LOD**									
ACM Type	U	2192		N/A	-		-		-		-		-
Asbestos Identification	U	2192		N/A	No Asbestos Detected		No Asbestos Detected		No Asbestos Detected		No Asbestos Detected		No Asbestos Detected
Moisture	N	2030	%	0.020	8.0	11	7.8	6.3	4.4	7.1	9.8	6.7	5.4
Soil Colour	N	2040		N/A	Brown	Brown	Brown	Brown	Brown	Brown	Brown	Brown	Brown
Other Material	N	2040		N/A	Stones	Stones	Stones	Stones	Stones	Stones	Stones	Stones	Stones
Soil Texture	N	2040		N/A	Sand	Sand	Sand	Sand	Sand	Sand	Sand	Sand	Sand
pH	M	2010		4.0	10.3	9.9	10.2	10.1	11.6	10.8	10.7	10.9	10.4
Cyanide (Total)	M	2300	mg/kg	0.50	3.1	1.9	1.5	1.5	1.1	1.0	1.3	1.2	1.5
Ammoniacal Nitrogen	M	2425	mg/kg	0.50	5.9	7.1	2.7	5.6	3.5	3.3	2.6	3.5	3.0
Iron (Total)	N	2430	mg/kg	100	29000	27000	26000	26000	25000	26000	26000	26000	26000
Arsenic	M	2450	mg/kg	1.0	13	11	11	10	15	11	13	13	14
Cadmium	M	2450	mg/kg	0.10	1.9	1.6	1.4	1.6	1.2	1.3	1.4	1.6	1.6
Chromium	M	2450	mg/kg	1.0	170	160	230	170	450	170	250	230	210
Manganese	M	2450	mg/kg	5.0	9800	7600	11000	8100	19000	8200	13000	11000	10000
Copper	M	2450	mg/kg	0.50	31	27	26	31	32	29	35	36	41
Mercury	M	2450	mg/kg	0.10	0.34	0.26	0.39	0.35	0.42	0.29	0.35	0.38	0.40
Nickel	M	2450	mg/kg	0.50	28	26	24	28	29	19	27	26	29
Lead	M	2450	mg/kg	0.50	320	260	220	260	180	220	230	270	290
Selenium	M	2450	mg/kg	0.20	0.77	0.62	0.83	0.55	0.44	0.69	0.68	0.65	0.80
Vanadium	U	2450	mg/kg	5.0	250	210	310	230	440	210	340	270	260
Zinc	M	2450	mg/kg	0.50	500	450	500	480	360	430	440	500	510
Organic Matter	M	2625	%	0.40	14	17	35	58	21	28	19	15	50
Aliphatic TPH >C5-C6	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C6-C8	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C8-C10	M	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C10-C12	M	2680	mg/kg	1.0	8.0	13	8.9	6.8	5.6	6.3	9.7	8.6	7.8
Aliphatic TPH >C12-C16	M	2680	mg/kg	1.0	28	30	34	19	16	24	17	40	17
Aliphatic TPH >C16-C21	M	2680	mg/kg	1.0	85	94	88	83	42	120	60	77	55
Aliphatic TPH >C21-C35	M	2680	mg/kg	1.0	93	68	62	62	5.4	77	26	100	28
Aliphatic TPH >C35-C44	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	9.7	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Total Aliphatic Hydrocarbons	N	2680	mg/kg	5.0	210	200	190	180	69	230	110	230	110
Aromatic TPH >C5-C7	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C7-C8	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C8-C10	M	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C10-C12	M	2680	mg/kg	1.0	22	30	20	22	8.8	9.8	12	18	18
Aromatic TPH >C12-C16	M	2680	mg/kg	1.0	5.9	6.0	19	19	2.9	5.3	4.0	4.2	5.0

Results - Soil

Project: P18-669

Client: Rodgers Leask Environmental					Chemtest Job No.:	22-03631	22-03631	22-03631	22-03631	22-03631	22-03631	22-03631	22-03631	22-03631
Quotation No.: Q21-24056					Chemtest Sample ID.:	1363661	1363662	1363663	1363664	1363665	1363666	1363667	1363668	1363669
					Sample Location:	2BSE-76	2BSE-77	2BSE-78	2BSE-79	2BSE-80	2BSE-81	2BSE-82	2BSE-83	2BSE-84
					Sample Type:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
					Top Depth (m):	1.50	1.00	1.00	0.20	0.50	1.00	1.00	0.50	2.50
					Bottom Depth (m):	1.50	1.00	1.00	0.20	0.50	1.00	1.00	0.50	2.50
					Date Sampled:	31-Jan-2022	31-Jan-2022	31-Jan-2022	31-Jan-2022	31-Jan-2022	31-Jan-2022	31-Jan-2022	31-Jan-2022	31-Jan-2022
					Asbestos Lab:	NEW-ASB		NEW-ASB		NEW-ASB		NEW-ASB		NEW-ASB
Determinand	**Accred.**	**SOP**	**Units**	**LOD**										
Aromatic TPH >C16-C21	U	2680	mg/kg	1.0		57	86	120	250	33	76	37	60	38
Aromatic TPH >C21-C35	M	2680	mg/kg	1.0		230	230	350	780	390	320	140	210	150
Aromatic TPH >C35-C44	N	2680	mg/kg	1.0		29	32	99	170	74	54	< 1.0	< 1.0	34
Total Aromatic Hydrocarbons	N	2680	mg/kg	5.0		350	380	610	1200	510	470	190	300	250
Total Petroleum Hydrocarbons	N	2680	mg/kg	10.0		560	580	800	1400	580	690	300	520	360
Benzene	M	2760	µg/kg	1.0		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Toluene	M	2760	µg/kg	1.0		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Ethylbenzene	M	2760	µg/kg	1.0		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
m & p-Xylene	M	2760	µg/kg	1.0		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
o-Xylene	M	2760	µg/kg	1.0		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Methyl Tert-Butyl Ether	M	2760	µg/kg	1.0		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Naphthalene	M	2800	mg/kg	0.10		65	20	14	20	8.8	12	12	11	11
Acenaphthylene	N	2800	mg/kg	0.10		3.5	3.1	3.2	3.5	2.8	5.7	3.1	2.6	3.0
Acenaphthene	M	2800	mg/kg	0.10		0.61	0.55	0.44	0.85	0.24	0.73	0.34	0.31	0.45
Fluorene	M	2800	mg/kg	0.10		3.5	2.3	2.0	3.2	1.8	5.2	2.3	1.9	2.1
Phenanthrene	M	2800	mg/kg	0.10		19	15	14	21	15	35	17	13	15
Anthracene	M	2800	mg/kg	0.10		5.4	4.5	5.1	7.1	4.6	14	6.7	4.6	7.2
Fluoranthene	M	2800	mg/kg	0.10		34	29	31	41	31	69	35	26	31
Pyrene	M	2800	mg/kg	0.10		24	21	23	30	22	49	24	19	22
Benzo[a]anthracene	M	2800	mg/kg	0.10		16	13	16	18	14	29	16	12	15
Chrysene	M	2800	mg/kg	0.10		16	14	17	18	14	31	17	12	16
Benzo[b]fluoranthene	M	2800	mg/kg	0.10		22	20	24	26	19	40	22	16	20
Benzo[k]fluoranthene	M	2800	mg/kg	0.10		8.0	6.8	8.2	9.5	6.8	14	7.5	6.0	7.1
Benzo[a]pyrene	M	2800	mg/kg	0.10		16	15	18	20	15	31	17	13	16
Indeno(1,2,3-c,d)Pyrene	M	2800	mg/kg	0.10		12	11	14	16	11	23	13	9.7	12
Dibenz(a,h)Anthracene	N	2800	mg/kg	0.10		2.6	2.1	2.7	3.2	2.2	4.3	2.4	1.8	2.2
Benzo[g,h,i]perylene	M	2800	mg/kg	0.10		10	8.9	11	13	8.6	18	10	8.0	9.1
Total Of 16 PAH's	N	2800	mg/kg	2.0		260	190	200	250	180	380	210	160	190
Resorcinol	M	2920	mg/kg	0.020		< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020
Phenol	M	2920	mg/kg	0.020		< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020
Cresols	M	2920	mg/kg	0.020		< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020
Xylenols	M	2920	mg/kg	0.020		< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020
1-Naphthol	N	2920	mg/kg	0.020		< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020
Trimethylphenols	M	2920	mg/kg	0.020		< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020
Total Phenols	M	2920	mg/kg	0.10		< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10

Results - Water

Project: P18-669

Client: Rodgers Leask Environmental			**Chemtest Job No.:**		22-03631	22-03631
Quotation No.: Q21-24056			**Chemtest Sample ID.:**		1363670	1363671
			Sample Location:		D2-S	D2-S
			Sample Type:		WATER	WATER
			Date Sampled:		31-Jan-2022	01-Feb-2022
Determinand	**Accred.**	**SOP**	**Units**	**LOD**		
pH	U	1010		N/A	7.9	8.5
Electrical Conductivity	U	1020	µS/cm	1.0	890	930
Suspended Solids At 105C	U	1030	mg/l	5.0	< 5.0	14
Total Dissolved Solids	N	1020	mg/l	1.0	580	600
Turbidity	N	1060	NTU	1.0	11	9.9
Biochemical Oxygen Demand	N	1090	mg O2/l	4.0	< 4.0	< 4.0
Chemical Oxygen Demand	U	1100	mg O2/l	10	22	25
Dissolved Oxygen	N	1150	mg O2/l	0.50	10	10
Redox Potential	N	1170	mV	N/A	22	6.3
Chloride	U	1220	mg/l	1.0	210	420
Fluoride	U	1220	mg/l	0.050	0.65	0.71
Ammoniacal Nitrogen	U	1220	mg/l	0.050	1.3	2.6
Phosphorus (Total)	N	1220	mg/l	0.020	0.024	0.025
Phosphate	U	1220	mg/l	0.200	< 0.20	< 0.20
Phosphorus (Dissolved)	U	1220	mg/l	0.020	0.023	0.024
Sulphur	N	1220	mg/l	1.0	67	87
Sulphate	U	1220	mg/l	1.0	200	260
Cyanide (Total)	U	1300	mg/l	0.050	< 0.050	< 0.050
Cyanide (Free)	U	1300	mg/l	0.050	< 0.050	< 0.050
Thiocyanate	U	1300	mg/l	0.50	< 0.50	< 0.50
Cyanide (Complex)	U	1300	mg/l	0.050	< 0.050	< 0.050
Sulphide	U	1325	mg/l	0.050	< 0.050	< 0.050
Calcium	U	1455	mg/l	2.00	74	64
Magnesium	U	1455	mg/l	0.20	11	9.5
Total Calcium	N	1455	mg/l	5.0	72	64
Total Magnesium	N	1455	mg/l	0.50	11	9.7
Total Hardness as CaCO3	U	1270	mg/l	15	230	200
Arsenic (Dissolved)	U	1455	µg/l	0.20	2.4	4.0
Boron (Dissolved)	U	1455	µg/l	10.0	130	140
Barium (Dissolved)	U	1455	µg/l	5.00	55	43
Beryllium (Dissolved)	U	1455	µg/l	1.00	< 1.0	< 1.0
Cadmium (Dissolved)	U	1455	µg/l	0.11	< 0.11	< 0.11
Chromium (Dissolved)	U	1455	µg/l	0.50	< 0.50	< 0.50
Copper (Dissolved)	U	1455	µg/l	0.50	2.1	3.1
Iron (Dissolved)	N	1455	µg/l	5.0	16	22
Mercury (Dissolved)	U	1455	µg/l	0.05	< 0.05	< 0.05
Manganese (Dissolved)	U	1455	µg/l	0.50	140	62
Nickel (Dissolved)	U	1455	µg/l	0.50	2.1	2.3
Lead (Dissolved)	U	1455	µg/l	0.50	< 0.50	< 0.50
Antimony (Dissolved)	U	1455	µg/l	0.50	0.51	0.56

Results - Water

Project: P18-669

Client: Rodgers Leask Environmental			**Chemtest Job No.:**		22-03631	22-03631
Quotation No.: Q21-24056			**Chemtest Sample ID.:**		1363670	1363671
			Sample Location:		D2-S	D2-S
			Sample Type:		WATER	WATER
			Date Sampled:		31-Jan-2022	01-Feb-2022
Determinand	**Accred.**	**SOP**	**Units**	**LOD**		
Selenium (Dissolved)	U	1455	µg/l	0.50	1.1	2.2
Vanadium (Dissolved)	U	1455	µg/l	0.50	11	23
Zinc (Dissolved)	U	1455	µg/l	2.5	3.5	3.0
Arsenic (Total)	N	1455	µg/l	0.20	2.4	4.0
Boron (Total)	N	1455	µg/l	10.0	140	140
Barium (Total)	N	1455	µg/l	5.00	55	44
Beryllium (Total)	N	1455	µg/l	1.00	< 1.0	< 1.0
Cadmium (Total)	N	1455	µg/l	0.11	< 0.11	< 0.11
Chromium (Total)	N	1455	µg/l	0.50	< 0.50	< 0.50
Copper (Total)	N	1455	µg/l	0.50	2.1	3.2
Iron (Total)	N	1455	µg/l	5.0	16	22
Mercury (Total)	N	1455	µg/l	0.05	< 0.05	< 0.05
Manganese (Total)	N	1455	µg/l	0.50	140	62
Nickel (Total)	N	1455	µg/l	0.50	2.1	2.3
Lead (Total)	N	1455	µg/l	0.50	< 0.50	< 0.50
Antimony (Total)	N	1455	µg/l	0.50	0.51	0.56
Selenium (Total)	N	1455	µg/l	0.50	1.9	2.4
Vanadium (Total)	N	1455	µg/l	0.50	11	23
Zinc (Total)	N	1455	µg/l	2.5	3.5	3.0
Chromium (Hexavalent)	U	1490	µg/l	20	< 20	< 20
Dissolved Organic Carbon	U	1610	mg/l	2.0	7.3	8.0
Total Inorganic Carbon	N	1220	mg/l	2.5	34	29
Total Organic Carbon	U	1610	mg/l	2.0	7.4	8.5
Aliphatic TPH >C5-C6	N	1675	µg/l	0.10	< 0.10	< 0.10
Aliphatic TPH >C6-C8	N	1675	µg/l	0.10	< 0.10	< 0.10
Aliphatic TPH >C8-C10	N	1675	µg/l	0.10	< 0.10	< 0.10
Aliphatic TPH >C10-C12	N	1675	µg/l	0.10	< 0.10	< 0.10
Aliphatic TPH >C12-C16	N	1675	µg/l	0.10	< 0.10	< 0.10
Aliphatic TPH >C16-C21	N	1675	µg/l	0.10	< 0.10	< 0.10
Aliphatic TPH >C21-C35	N	1675	µg/l	0.10	< 0.10	< 0.10
Aliphatic TPH >C35-C44	N	1675	µg/l	0.10	< 0.10	< 0.10
Total Aliphatic Hydrocarbons	N	1675	µg/l	5.0	< 5.0	< 5.0
Aromatic TPH >C5-C7	N	1675	µg/l	0.10	< 0.10	< 0.10
Aromatic TPH >C7-C8	N	1675	µg/l	0.10	< 0.10	< 0.10
Aromatic TPH >C8-C10	N	1675	µg/l	0.10	< 0.10	< 0.10
Aromatic TPH >C10-C12	N	1675	µg/l	0.10	< 0.10	< 0.10
Aromatic TPH >C12-C16	N	1675	µg/l	0.10	< 0.10	< 0.10
Aromatic TPH >C16-C21	N	1675	µg/l	0.10	< 0.10	< 0.10
Aromatic TPH >C21-C35	N	1675	µg/l	0.10	< 0.10	< 0.10
Aromatic TPH >C35-C44	N	1675	µg/l	0.10	< 0.10	< 0.10

Results - Water

Project: P18-669

Client: Rodgers Leask Environmental			**Chemtest Job No.:**		22-03631	22-03631
Quotation No.: Q21-24056			**Chemtest Sample ID.:**		1363670	1363671
			Sample Location:		D2-S	D2-S
			Sample Type:		WATER	WATER
			Date Sampled:		31-Jan-2022	01-Feb-2022
Determinand	**Accred.**	**SOP**	**Units**	**LOD**		
Total Aromatic Hydrocarbons	N	1675	µg/l	5.0	< 5.0	< 5.0
Total Petroleum Hydrocarbons	N	1675	µg/l	10	< 10	< 10
Dichlorodifluoromethane	U	1760	µg/l	1.0	< 1.0	< 1.0
Chloromethane	U	1760	µg/l	1.0	< 1.0	< 1.0
Vinyl Chloride	N	1760	µg/l	1.0	< 1.0	< 1.0
Bromomethane	U	1760	µg/l	5	< 5	< 5
Chloroethane	U	1760	µg/l	2.0	< 2.0	< 2.0
Trichlorofluoromethane	U	1760	µg/l	1.0	< 1.0	< 1.0
1,1-Dichloroethene	U	1760	µg/l	1.0	< 1.0	< 1.0
Trans 1,2-Dichloroethene	U	1760	µg/l	1.0	< 1.0	< 1.0
1,1-Dichloroethane	U	1760	µg/l	1.0	< 1.0	< 1.0
cis 1,2-Dichloroethene	U	1760	µg/l	1.0	< 1.0	< 1.0
Bromochloromethane	U	1760	µg/l	5	< 5	< 5
Trichloromethane	U	1760	µg/l	1.0	< 1.0	< 1.0
1,1,1-Trichloroethane	U	1760	µg/l	1.0	< 1.0	< 1.0
Tetrachloromethane	U	1760	µg/l	1.0	< 1.0	< 1.0
1,1-Dichloropropene	U	1760	µg/l	1.0	< 1.0	< 1.0
Benzene	U	1760	µg/l	1.0	< 1.0	< 1.0
1,2-Dichloroethane	U	1760	µg/l	2.0	< 2.0	< 2.0
Trichloroethene	N	1760	µg/l	1.0	< 1.0	< 1.0
1,2-Dichloropropane	U	1760	µg/l	1.0	< 1.0	< 1.0
Dibromomethane	U	1760	µg/l	10	< 10	< 10
Bromodichloromethane	U	1760	µg/l	5	< 5	< 5
cis-1,3-Dichloropropene	N	1760	µg/l	10	< 10	< 10
Toluene	U	1760	µg/l	1.0	< 1.0	< 1.0
Trans-1,3-Dichloropropene	N	1760	µg/l	10	< 10	< 10
1,1,2-Trichloroethane	U	1760	µg/l	10	< 10	< 10
Tetrachloroethene	U	1760	µg/l	1.0	< 1.0	< 1.0
1,3-Dichloropropane	U	1760	µg/l	2.0	< 2.0	< 2.0
Dibromochloromethane	U	1760	µg/l	10	< 10	< 10
1,2-Dibromoethane	U	1760	µg/l	5	< 5	< 5
Chlorobenzene	N	1760	µg/l	1.0	< 1.0	< 1.0
1,1,1,2-Tetrachloroethane	U	1760	µg/l	2.0	< 2.0	< 2.0
Ethylbenzene	U	1760	µg/l	1.0	< 1.0	< 1.0
m & p-Xylene	U	1760	µg/l	1.0	< 1.0	< 1.0
o-Xylene	U	1760	µg/l	1.0	< 1.0	< 1.0
Styrene	U	1760	µg/l	1.0	< 1.0	< 1.0
Tribromomethane	U	1760	µg/l	1.0	< 1.0	< 1.0
Isopropylbenzene	U	1760	µg/l	1.0	< 1.0	< 1.0
Bromobenzene	U	1760	µg/l	1.0	< 1.0	< 1.0

Results - Water

Project: P18-669

Client: Rodgers Leask Environmental			**Chemtest Job No.:**		22-03631	22-03631
Quotation No.: Q21-24056			**Chemtest Sample ID.:**		1363670	1363671
			Sample Location:		D2-S	D2-S
			Sample Type:		WATER	WATER
			Date Sampled:		31-Jan-2022	01-Feb-2022
Determinand	**Accred.**	**SOP**	**Units**	**LOD**		
1,2,3-Trichloropropane	N	1760	µg/l	50	< 50	< 50
N-Propylbenzene	U	1760	µg/l	1.0	< 1.0	< 1.0
2-Chlorotoluene	U	1760	µg/l	1.0	< 1.0	< 1.0
1,3,5-Trimethylbenzene	U	1760	µg/l	1.0	< 1.0	< 1.0
4-Chlorotoluene	U	1760	µg/l	1.0	< 1.0	< 1.0
Tert-Butylbenzene	U	1760	µg/l	1.0	< 1.0	< 1.0
1,2,4-Trimethylbenzene	U	1760	µg/l	1.0	< 1.0	< 1.0
Sec-Butylbenzene	U	1760	µg/l	1.0	< 1.0	< 1.0
1,3-Dichlorobenzene	N	1760	µg/l	1.0	< 1.0	< 1.0
4-Isopropyltoluene	U	1760	µg/l	1.0	< 1.0	< 1.0
1,4-Dichlorobenzene	U	1760	µg/l	1.0	< 1.0	< 1.0
N-Butylbenzene	U	1760	µg/l	1.0	< 1.0	< 1.0
1,2-Dichlorobenzene	U	1760	µg/l	1.0	< 1.0	< 1.0
1,2-Dibromo-3-Chloropropane	U	1760	µg/l	50	< 50	< 50
1,2,4-Trichlorobenzene	U	1760	µg/l	1.0	< 1.0	< 1.0
Hexachlorobutadiene	U	1760	µg/l	1.0	< 1.0	< 1.0
1,2,3-Trichlorobenzene	U	1760	µg/l	2.0	< 2.0	< 2.0
Methyl Tert-Butyl Ether	N	1760	µg/l	1.0	< 1.0	< 1.0
N-Nitrosodimethylamine	N	1790	µg/l	0.50	< 0.50	< 0.50
Phenol	N	1790	µg/l	0.50	< 0.50	< 0.50
2-Chlorophenol	N	1790	µg/l	0.50	< 0.50	< 0.50
Bis-(2-Chloroethyl)Ether	N	1790	µg/l	0.50	< 0.50	< 0.50
1,3-Dichlorobenzene	N	1790	µg/l	0.50	< 0.50	< 0.50
1,4-Dichlorobenzene	N	1790	µg/l	0.50	< 0.50	< 0.50
1,2-Dichlorobenzene	N	1790	µg/l	0.50	< 0.50	< 0.50
2-Methylphenol (o-Cresol)	N	1790	µg/l	0.50	< 0.50	< 0.50
Bis(2-Chloroisopropyl)Ether	N	1790	µg/l	0.50	< 0.50	< 0.50
Hexachloroethane	N	1790	µg/l	0.50	< 0.50	< 0.50
N-Nitrosodi-n-propylamine	N	1790	µg/l	0.50	< 0.50	< 0.50
4-Methylphenol	N	1790	µg/l	0.50	< 0.50	< 0.50
Nitrobenzene	N	1790	µg/l	0.50	< 0.50	< 0.50
Isophorone	N	1790	µg/l	0.50	< 0.50	< 0.50
2-Nitrophenol	N	1790	µg/l	0.50	< 0.50	< 0.50
2,4-Dimethylphenol	N	1790	µg/l	0.50	< 0.50	< 0.50
Bis(2-Chloroethoxy)Methane	N	1790	µg/l	0.50	< 0.50	< 0.50
2,4-Dichlorophenol	N	1790	µg/l	0.50	< 0.50	< 0.50
1,2,4-Trichlorobenzene	N	1790	µg/l	0.50	< 0.50	< 0.50
Naphthalene	N	1790	µg/l	0.50	< 0.50	< 0.50
4-Chloroaniline	N	1790	µg/l	0.50	< 0.50	< 0.50
Hexachlorobutadiene	N	1790	µg/l	0.50	< 0.50	< 0.50

Results - Water

Project: P18-669

Client: Rodgers Leask Environmental			**Chemtest Job No.:**		22-03631	22-03631
Quotation No.: Q21-24056			**Chemtest Sample ID.:**		1363670	1363671
			Sample Location:		D2-S	D2-S
			Sample Type:		WATER	WATER
			Date Sampled:		31-Jan-2022	01-Feb-2022
Determinand	**Accred.**	**SOP**	**Units**	**LOD**		
4-Chloro-3-Methylphenol	N	1790	µg/l	0.50	< 0.50	< 0.50
2-Methylnaphthalene	N	1790	µg/l	0.50	< 0.50	< 0.50
Hexachlorocyclopentadiene	N	1790	µg/l	0.50	< 0.50	< 0.50
2,4,6-Trichlorophenol	N	1790	µg/l	0.50	< 0.50	< 0.50
2,4,5-Trichlorophenol	N	1790	µg/l	0.50	< 0.50	< 0.50
2-Chloronaphthalene	N	1790	µg/l	0.50	< 0.50	< 0.50
2-Nitroaniline	N	1790	µg/l	0.50	< 0.50	< 0.50
Acenaphthylene	N	1790	µg/l	0.50	< 0.50	< 0.50
Dimethylphthalate	N	1790	µg/l	0.50	< 0.50	< 0.50
2,6-Dinitrotoluene	N	1790	µg/l	0.50	< 0.50	< 0.50
Acenaphthene	N	1790	µg/l	0.50	< 0.50	< 0.50
3-Nitroaniline	N	1790	µg/l	0.50	< 0.50	< 0.50
Dibenzofuran	N	1790	µg/l	0.50	< 0.50	< 0.50
4-Chlorophenylphenylether	N	1790	µg/l	0.50	< 0.50	< 0.50
2,4-Dinitrotoluene	N	1790	µg/l	0.50	< 0.50	< 0.50
Fluorene	N	1790	µg/l	0.50	< 0.50	< 0.50
Diethyl Phthalate	N	1790	µg/l	0.50	< 0.50	< 0.50
4-Nitroaniline	N	1790	µg/l	0.50	< 0.50	< 0.50
2-Methyl-4,6-Dinitrophenol	N	1790	µg/l	0.50	< 0.50	< 0.50
Azobenzene	N	1790	µg/l	0.50	< 0.50	< 0.50
4-Bromophenylphenyl Ether	N	1790	µg/l	0.50	< 0.50	< 0.50
Hexachlorobenzene	N	1790	µg/l	0.50	< 0.50	< 0.50
Pentachlorophenol	N	1790	µg/l	0.50	< 0.50	< 0.50
Phenanthrene	N	1790	µg/l	0.50	< 0.50	< 0.50
Anthracene	N	1790	µg/l	0.50	< 0.50	< 0.50
Carbazole	N	1790	µg/l	0.50	< 0.50	< 0.50
Di-N-Butyl Phthalate	N	1790	µg/l	0.50	< 0.50	< 0.50
Fluoranthene	N	1790	µg/l	0.50	< 0.50	< 0.50
Pyrene	N	1790	µg/l	0.50	< 0.50	< 0.50
Butylbenzyl Phthalate	N	1790	µg/l	0.50	< 0.50	< 0.50
Benzo[a]anthracene	N	1790	µg/l	0.50	< 0.50	< 0.50
Chrysene	N	1790	µg/l	0.50	< 0.50	< 0.50
Bis(2-Ethylhexyl)Phthalate	N	1790	µg/l	0.50	< 0.50	< 0.50
Di-N-Octyl Phthalate	N	1790	µg/l	0.50	< 0.50	< 0.50
Benzo[b]fluoranthene	N	1790	µg/l	0.50	< 0.50	< 0.50
Benzo[k]fluoranthene	N	1790	µg/l	0.50	< 0.50	< 0.50
Benzo[a]pyrene	N	1790	µg/l	0.50	< 0.50	< 0.50
Indeno(1,2,3-c,d)Pyrene	N	1790	µg/l	0.50	< 0.50	< 0.50
Dibenz(a,h)Anthracene	N	1790	µg/l	0.50	< 0.50	< 0.50
Benzo[g,h,i]perylene	N	1790	µg/l	0.50	< 0.50	< 0.50

Results - Water

Project: P18-669

Client: Rodgers Leask Environmental			**Chemtest Job No.:**		22-03631	22-03631
Quotation No.: Q21-24056			**Chemtest Sample ID.:**		1363670	1363671
			Sample Location:		D2-S	D2-S
			Sample Type:		WATER	WATER
			Date Sampled:		31-Jan-2022	01-Feb-2022
Determinand	**Accred.**	**SOP**	**Units**	**LOD**		
4-Nitrophenol	N	1790	µg/l	0.50	< 0.50	< 0.50
Naphthalene	U	1800	µg/l	0.10	< 0.10	< 0.10
Acenaphthylene	U	1800	µg/l	0.10	< 0.10	< 0.10
Acenaphthene	U	1800	µg/l	0.10	< 0.10	< 0.10
Fluorene	U	1800	µg/l	0.10	< 0.10	< 0.10
Phenanthrene	U	1800	µg/l	0.10	< 0.10	< 0.10
Anthracene	U	1800	µg/l	0.10	< 0.10	< 0.10
Fluoranthene	U	1800	µg/l	0.10	< 0.10	< 0.10
Pyrene	U	1800	µg/l	0.10	< 0.10	< 0.10
Benzo[a]anthracene	U	1800	µg/l	0.10	< 0.10	< 0.10
Chrysene	U	1800	µg/l	0.10	< 0.10	< 0.10
Benzo[b]fluoranthene	U	1800	µg/l	0.10	< 0.10	< 0.10
Benzo[k]fluoranthene	U	1800	µg/l	0.10	< 0.10	< 0.10
Benzo[a]pyrene	U	1800	µg/l	0.10	< 0.10	< 0.10
Indeno(1,2,3-c,d)Pyrene	U	1800	µg/l	0.10	< 0.10	< 0.10
Dibenz(a,h)Anthracene	U	1800	µg/l	0.10	< 0.10	< 0.10
Benzo[g,h,i]perylene	U	1800	µg/l	0.10	< 0.10	< 0.10
Total Of 16 PAH's	U	1800	µg/l	2.0	< 2.0	< 2.0
Total Phenols	U	1920	mg/l	0.030	< 0.030	< 0.030

Test Methods

SOP	Title	Parameters included	Method summary
1010	pH Value of Waters	pH	pH Meter
1020	Electrical Conductivity and Total Dissolved Solids (TDS) in Waters	Electrical Conductivity and Total Dissolved Solids (TDS) in Waters	Conductivity Meter
1030	Total Suspended Solids	Total suspended solids	Filtration of a mixed sample through a standard glass fibre filter and determination of the mass of residue retained dried at 105°C.
1060	Turbidity	Turbidity	Spetctrophotometry
1090	Biochemical Oxygen Demand	Biochemical Oxygen demand (BOD)	Colorimetric determination of dissolved oxygen in seeded sample after 5 days incubation at 20°C.
1100	Chemical Oxygen Demand	Chemical Oxygen demand (COD)	Dichromate oxidation of organic matter in sample followed by colorimetric determination of residual Cr[VI].
1150	Dissolved Oxygen	Dissolved Oxygen (DO)	Electrometric determination (on site preferred), using oxygen sensitive membrane electrode.
1170	Redox Potential	Redox Potential	Meter
1220	Anions, Alkalinity & Ammonium in Waters	Fluoride; Chloride; Nitrite; Nitrate; Total; Oxidisable Nitrogen (TON); Sulfate; Phosphate; Alkalinity; Ammonium	Automated colorimetric analysis using 'Aquakem 600' Discrete Analyser.
1270	Total Hardness of Waters	Total hardness	Calculation applied to calcium and magnesium results, expressed as mg l-1 CaCO3 equivalent.
1300	Cyanides & Thiocyanate in Waters	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Continuous Flow Analysis.
1325	Sulphide in Waters	Sulphides	Automated colorimetric analysis by 'Aquakem 600' Discrete Analyser using N,N–dimethyl-pphenylenediamine.
1455	Metals in Waters by ICP-MS	Metals, including: Antimony; Arsenic; Barium; Beryllium; Boron; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Tin; Vanadium; Zinc	Filtration of samples followed by direct determination by inductively coupled plasma mass spectrometry (ICP-MS).
1490	Hexavalent Chromium in Waters	Chromium [VI]	Automated colorimetric analysis by 'Aquakem 600' Discrete Analyser using 1,5-diphenylcarbazide.
1610	Total/Dissolved Organic Carbon in Waters	Organic Carbon	TOC Analyser using Catalytic Oxidation
1675	TPH Aliphatic/Aromatic split in Waters by GC-FID(cf. Texas Method 1006 / TPH CWG)	Aliphatics: >C5–C6, >C6–C8, >C8– C10, >C10–C12, >C12–C16, >C16–C21, >C21–C35, >C35– C44Aromatics: >C5–C7, >C7–C8, >C8– C10, >C10–C12, >C12–C16, >C16– C21, >C21– C35, >C35– C44	Pentane extraction / GCxGC FID detection
1760	Volatile Organic Compounds (VOCs) in Waters by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics. (cf. USEPA Method 8260)	Automated headspace gas chromatographic (GC) analysis of water samples with mass spectrometric (MS) detection of volatile organic compounds.
1790	Semi-Volatile Organic Compounds (SVOCs) in Waters by GC-MS	Semi-volatile organic compounds	Solvent extraction / GCMS detection
1800	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Waters by GC-MS	Acenaphthene; Acenaphthylene; Anthracene; Benzo[a]Anthracene; Benzo[a]Pyrene; Benzo[b]Fluoranthene; Benzo[ghi]Perylene; Benzo[k]Fluoranthene; Chrysene; Dibenz[ah]Anthracene; Fluoranthene; Fluorene; Indeno[123cd]Pyrene; Naphthalene; Phenanthrene; Pyrene	Pentane extraction / GCMS detection
1920	Phenols in Waters by HPLC	Phenolic compounds including: Phenol, Cresols, Xylenols, Trimethylphenols Note: Chlorophenols are excluded.	Determination by High Performance Liquid Chromatography (HPLC) using electrochemical detection.

Test Methods

SOP	Title	Parameters included	Method summary
2010	pH Value of Soils	pH	pH Meter
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <37°C.
2040	Soil Description(Requirement of MCERTS)	Soil description	As received soil is described based upon BS5930
2192	Asbestos	Asbestos	Polarised light microscopy / Gravimetry
2300	Cyanides & Thiocyanate in Soils	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Allkaline extraction followed by colorimetric determination using Automated Flow Injection Analyser.
2425	Extractable Ammonium in soils	Ammonium	Extraction with potassium chloride solution / analysis by 'Aquakem 600' Discrete Analyser using sodium salicylate and sodium dichloroisocyanurate.
2430	Total Sulphate in soils	Total Sulphate	Acid digestion followed by determination of sulphate in extract by ICP-OES.
2450	Acid Soluble Metals in Soils	Metals, including: Arsenic; Barium; Beryllium; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Vanadium; Zinc	Acid digestion followed by determination of metals in extract by ICP-MS.
2625	Total Organic Carbon in Soils	Total organic Carbon (TOC)	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.
2680	TPH A/A Split	Aliphatics: >C5–C6, >C6–C8,>C8–C10, >C10–C12, >C12–C16, >C16–C21, >C21–C35, >C35– C44Aromatics: >C5–C7, >C7–C8, >C8– C10, >C10–C12, >C12–C16, >C16– C21, >C21– C35, >C35– C44	Dichloromethane extraction / GCxGC FID detection
2760	Volatile Organic Compounds (VOCs) in Soils by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics.(cf. USEPA Method 8260)*please refer to UKAS schedule	Automated headspace gas chromatographic (GC) analysis of a soil sample, as received, with mass spectrometric (MS) detection of volatile organic compounds.
2800	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Soil by GC-MS	Acenaphthene*; Acenaphthylene; Anthracene*; Benzo[a]Anthracene*; Benzo[a]Pyrene*; Benzo[b]Fluoranthene*; Benzo[ghi]Perylene*; Benzo[k]Fluoranthene; Chrysene*; Dibenz[ah]Anthracene; Fluoranthene*; Fluorene*; Indeno[123cd]Pyrene*; Naphthalene*; Phenanthrene*; Pyrene*	Dichloromethane extraction / GC-MS
2920	Phenols in Soils by HPLC	Phenolic compounds including Resorcinol, Phenol, Methylphenols, Dimethylphenols, 1-Naphthol and TrimethylphenolsNote: chlorophenols are excluded.	60:40 methanol/water mixture extraction, followed by HPLC determination using electrochemical detection.

Report Information

Key

U	UKAS accredited
M	MCERTS and UKAS accredited
N	Unaccredited
S	This analysis has been subcontracted to a UKAS accredited laboratory that is accredited for this analysis
SN	This analysis has been subcontracted to a UKAS accredited laboratory that is not accredited for this analysis
T	This analysis has been subcontracted to an unaccredited laboratory
I/S	Insufficient Sample
U/S	Unsuitable Sample
N/E	not evaluated
<	"less than"
>	"greater than"
SOP	Standard operating procedure
LOD	Limit of detection

Comments or interpretations are beyond the scope of UKAS accreditation
The results relate only to the items tested
Uncertainty of measurement for the determinands tested are available upon request
None of the results in this report have been recovery corrected
All results are expressed on a dry weight basis

The following tests were analysed on samples as received and the results subsequently corrected to a dry weight basis TPH, BTEX, VOCs, SVOCs, PCBs, Phenols

For all other tests the samples were dried at < 37°C prior to analysis
All Asbestos testing is performed at the indicated laboratory
Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1

Sample Deviation Codes

A - Date of sampling not supplied
B - Sample age exceeds stability time (sampling to extraction)
C - Sample not received in appropriate containers
D - Broken Container
E - Insufficient Sample (Applies to LOI in Trommel Fines Only)

Sample Retention and Disposal

All soil samples will be retained for a period of 30 days from the date of receipt
All water samples will be retained for 14 days from the date of receipt
Charges may apply to extended sample storage

If you require extended retention of samples, please email your requirements to:
customerservices@chemtest.com

eurofins | Chemtest
Eurofins Chemtest Ltd
Depot Road
Newmarket
CB8 0AL
Tel: 01638 606070
Email: info@chemtest.com

Amended Report

Report No.:	22-22344-2		
Initial Date of Issue:	22-Jun-2022	**Date of Re-Issue:**	27-Jun-2022
Client	Rodgers Leask Environmental		
Client Address:	Office 225 2430/2440 Aztec West Almoundsbury Bristol BS32 4AQ		
Contact(s):	Caitlin Davies Chris Wilson David McCarroll		
Project	P17-480		
Quotation No.:	Q21-24056	**Date Received:**	16-Jun-2022
Order No.:	RLL 22-06-33	**Date Instructed:**	16-Jun-2022
No. of Samples:	13		
Turnaround (Wkdays):	10	**Results Due:**	29-Jun-2022
Date Approved:	27-Jun-2022		
Approved By:			
Details:	Stuart Henderson, Technical Manager		

Results - Soil

Project: P17-480

Client: Rodgers Leask Environmental				**Chemtest Job No.:**	22-22344	22-22344	22-22344	22-22344	22-22344	22-22344	22-22344	22-22344	22-22344
Quotation No.: Q21-24056				**Chemtest Sample ID.:**	1449050	1449051	1449052	1449053	1449054	1449055	1449056	1449057	1449058
				Sample Location:	BP-SV40	BP-SV41	BP-SV42	BP-SV43	BP-SV44	BP-SV45	BP-SV46	BP-SV47	BP-SV48
				Sample Type:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
				Top Depth (m):	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
				Date Sampled:	14-Jun-2022	14-Jun-2022	14-Jun-2022	14-Jun-2022	14-Jun-2022	14-Jun-2022	14-Jun-2022	14-Jun-2022	14-Jun-2022
				Asbestos Lab:	NEW-ASB	NEW-ASB	NEW-ASB	NEW-ASB	NEW-ASB	NEW-ASB	NEW-ASB	NEW-ASB	NEW-ASB
Determinand	**Accred.**	**SOP**	**Units**	**LOD**									
ACM Type	U	2192		N/A	-	-	-	-	-	-	-	Free Fibres	Free Fibres
Asbestos Identification	U	2192		N/A	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	Amosite	Amosite
Asbestos by Gravimetry	U	2192	%	0.001								<0.001	<0.001
Total Asbestos	U	2192	%	0.001								<0.001	<0.001
Moisture	N	2030	%	0.020	9.2	3.3	2.6	4.3	8.2	8.0	7.9	4.8	4.3
Soil Colour	N	2040		N/A	Brown	Brown	Brown	Brown	Brown	Brown	Brown	Brown	Brown
Other Material	N	2040		N/A	Stones	Stones and Roots	Stones	Stones	Stones	Stones	Stones and Roots	Stones	Stones
Soil Texture	N	2040		N/A	Sand	Sand	Sand	Sand	Sand	Sand	Sand	Sand	Sand
pH	M	2010		4.0	11.9	9.8	11.4	9.3	9.2	9.0	9.2	9.1	9.7
Magnesium (Water Soluble)	N	2120	g/l	0.010				< 0.010					
Sulphate (2:1 Water Soluble) as SO4	M	2120	g/l	0.010				1.3					
Total Sulphur	M	2175	%	0.010				0.57					
Chloride (Water Soluble)	M	2220	g/l	0.010				0.013					
Nitrate (Water Soluble)	N	2220	g/l	0.010				< 0.010					
Cyanide (Total)	M	2300	mg/kg	0.50	1.6	2.9	6.3	17	13	4.5	5.2	11	5.7
Ammoniacal Nitrogen	M	2425	mg/kg	0.50	1.2	1.8	2.2	0.93	< 0.50	4.3	1.0	2.0	1.2
Ammonium (Water Soluble)	M	2220	g/l	0.01				< 0.01					
Iron (Total)	N	2430	mg/kg	100	26000	29000	26000	26000	29000	19000	28000	29000	27000
Sulphate (Acid Soluble)	U	2430	%	0.010				0.31					
Arsenic	M	2455	mg/kg	0.5	2.6	7.4	5.2	5.0	9.5	5.2	6.1	5.9	4.4
Cadmium	M	2455	mg/kg	0.10	0.38	0.42	0.78	0.82	2.1	0.50	2.0	0.87	0.68
Chromium	M	2455	mg/kg	0.5	170	170	90	28	38	20	43	86	50
Manganese	M	2455	mg/kg	1.0	11000	8000	6100	6600	3300	1200	3200	5300	3100
Copper	M	2455	mg/kg	0.50	9.4	21	15	12	19	16	23	15	14
Mercury	M	2455	mg/kg	0.05	0.18	0.18	0.45	0.46	0.56	0.22	0.23	0.61	0.17
Nickel	M	2455	mg/kg	0.50	7.0	13	11	8.7	15	10	12	12	11
Lead	M	2455	mg/kg	0.50	51	73	160	170	470	89	180	170	100
Selenium	M	2455	mg/kg	0.25	0.57	0.71	1.1	0.88	1.4	0.83	0.73	0.82	0.52
Vanadium	U	2455	mg/kg	0.5	200	180	140	44	72	34	72	180	76
Zinc	M	2455	mg/kg	0.50	140	200	370	480	1100	240	470	390	270
Organic Matter	M	2625	%	0.40	6.7	6.6	11	11	12	53	38	26	72
Aliphatic TPH >C5-C6	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C6-C8	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C8-C10	M	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C10-C12	M	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C12-C16	M	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0

Results - Soil

Project: P17-480

Client: Rodgers Leask Environmental			Chemtest Job No.:		22-22344	22-22344	22-22344	22-22344	22-22344	22-22344	22-22344	22-22344	22-22344
Quotation No.: Q21-24056			Chemtest Sample ID.:		1449050	1449051	1449052	1449053	1449054	1449055	1449056	1449057	1449058
			Sample Location:		BP-SV40	BP-SV41	BP-SV42	BP-SV43	BP-SV44	BP-SV45	BP-SV46	BP-SV47	BP-SV48
			Sample Type:		SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
			Top Depth (m):		0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
			Date Sampled:		14-Jun-2022	14-Jun-2022	14-Jun-2022	14-Jun-2022	14-Jun-2022	14-Jun-2022	14-Jun-2022	14-Jun-2022	14-Jun-2022
			Asbestos Lab:		NEW-ASB	NEW-ASB	NEW-ASB	NEW-ASB	NEW-ASB	NEW-ASB	NEW-ASB	NEW-ASB	NEW-ASB
Determinand	**Accred.**	**SOP**	**Units**	**LOD**									
Aliphatic TPH >C16-C21	M	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	6.1
Aliphatic TPH >C21-C35	M	2680	mg/kg	1.0	< 1.0	78	45	69	58	< 1.0	58	52	62
Aliphatic TPH >C35-C44	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	45	< 1.0	42
Total Aliphatic Hydrocarbons	N	2680	mg/kg	5.0	< 5.0	78	45	69	58	< 5.0	100	52	110
Aromatic TPH >C5-C7	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C7-C8	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C8-C10	M	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C10-C12	M	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	4.3	< 1.0	22
Aromatic TPH >C12-C16	M	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	4.3
Aromatic TPH >C16-C21	U	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	34	7.7	60	< 1.0	42
Aromatic TPH >C21-C35	M	2680	mg/kg	1.0	< 1.0	170	160	2400	300	100	300	110	270
Aromatic TPH >C35-C44	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Total Aromatic Hydrocarbons	N	2680	mg/kg	5.0	< 5.0	170	160	2400	330	110	370	110	340
Total Petroleum Hydrocarbons	N	2680	mg/kg	10.0	< 10	240	210	2500	390	110	470	160	450
Benzene	M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Toluene	M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Ethylbenzene	M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
m & p-Xylene	M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
o-Xylene	M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Methyl Tert-Butyl Ether	M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Naphthalene	M	2800	mg/kg	0.10	< 0.10	1.5	3.7	9.0	6.1	7.9	14	16	32
Acenaphthylene	N	2800	mg/kg	0.10	< 0.10	0.32	0.70	10	1.2	2.6	1.5	5.7	5.0
Acenaphthene	M	2800	mg/kg	0.10	< 0.10	0.18	0.22	0.79	0.18	0.42	0.17	0.47	0.39
Fluorene	M	2800	mg/kg	0.10	< 0.10	0.48	0.50	13	0.53	2.5	0.78	1.9	3.9
Phenanthrene	M	2800	mg/kg	0.10	1.5	5.5	4.9	88	3.8	17	6.0	17	21
Anthracene	M	2800	mg/kg	0.10	0.34	1.3	1.1	20	1.1	5.2	2.0	6.2	9.1
Fluoranthene	M	2800	mg/kg	0.10	2.7	13	8.4	110	7.7	27	12	28	29
Pyrene	M	2800	mg/kg	0.10	2.4	9.6	6.0	77	6.1	18	9.0	21	19
Benzo[a]anthracene	M	2800	mg/kg	0.10	1.8	5.9	4.1	39	3.7	13	5.1	12	14
Chrysene	M	2800	mg/kg	0.10	2.0	6.1	4.0	38	3.1	14	5.4	14	16
Benzo[b]fluoranthene	M	2800	mg/kg	0.10	3.0	8.1	5.9	44	5.3	17	7.1	16	17
Benzo[k]fluoranthene	M	2800	mg/kg	0.10	1.1	3.0	1.9	17	1.6	5.9	2.3	5.3	5.7
Benzo[a]pyrene	M	2800	mg/kg	0.10	2.4	6.3	4.2	36	4.1	13	5.2	13	12
Indeno(1,2,3-c,d)Pyrene	M	2800	mg/kg	0.10	1.9	4.6	3.1	24	3.2	9.9	4.3	10	8.5
Dibenz(a,h)Anthracene	N	2800	mg/kg	0.10	0.32	0.77	0.64	4.5	0.65	2.0	0.63	1.6	2.0
Benzo[g,h,i]perylene	M	2800	mg/kg	0.10	1.8	4.0	2.8	20	2.6	8.2	3.7	8.4	6.9
Total Of 16 PAH's	N	2800	mg/kg	2.0	21	71	52	550	51	160	79	180	200
Resorcinol	M	2920	mg/kg	0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020

Results - Soil

Project: P17-480

Client: Rodgers Leask Environmental		**Chemtest Job No.:**			22-22344	22-22344	22-22344	22-22344	22-22344	22-22344	22-22344	22-22344	22-22344
Quotation No.: Q21-24056		**Chemtest Sample ID.:**			1449050	1449051	1449052	1449053	1449054	1449055	1449056	1449057	1449058
		Sample Location:			BP-SV40	BP-SV41	BP-SV42	BP-SV43	BP-SV44	BP-SV45	BP-SV46	BP-SV47	BP-SV48
		Sample Type:			SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
		Top Depth (m):			0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
		Date Sampled:			14-Jun-2022	14-Jun-2022	14-Jun-2022	14-Jun-2022	14-Jun-2022	14-Jun-2022	14-Jun-2022	14-Jun-2022	14-Jun-2022
		Asbestos Lab:			NEW-ASB	NEW-ASB	NEW-ASB	NEW-ASB	NEW-ASB	NEW-ASB	NEW-ASB	NEW-ASB	NEW-ASB
Determinand	**Accred.**	**SOP**	**Units**	**LOD**									
Phenol	M	2920	mg/kg	0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020
Cresols	M	2920	mg/kg	0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020
Xylenols	M	2920	mg/kg	0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020
1-Naphthol	N	2920	mg/kg	0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020
Trimethylphenols	M	2920	mg/kg	0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020
Total Phenols	M	2920	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10

Results - Soil

Project: P17-480

Client: Rodgers Leask Environmental		**Chemtest Job No.:**			22-22344	22-22344	22-22344	22-22344
Quotation No.: Q21-24056		**Chemtest Sample ID.:**			1449059	1449060	1449061	1449062
				Sample Location:	BP-SV49	BP-SV50	BP-SV51	BP-SV52
				Sample Type:	SOIL	SOIL	SOIL	SOIL
				Top Depth (m):	0.2	0.2	0.2	0.2
				Date Sampled:	14-Jun-2022	14-Jun-2022	14-Jun-2022	14-Jun-2022
				Asbestos Lab:	NEW-ASB	NEW-ASB	NEW-ASB	NEW-ASB
Determinand	**Accred.**	**SOP**	**Units**	**LOD**				
ACM Type	U	2192		N/A	-	-	-	-
Asbestos Identification	U	2192		N/A	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected
Asbestos by Gravimetry	U	2192	%	0.001				
Total Asbestos	U	2192	%	0.001				
Moisture	N	2030	%	0.020	2.5	4.2	5.1	5.9
Soil Colour	N	2040		N/A	Brown	Brown	Brown	Brown
Other Material	N	2040		N/A	Stones	Roots and Stones	Stones	Stones and Roots
Soil Texture	N	2040		N/A	Gravel	Sand	Sand	Sand
pH	M	2010		4.0	9.4	9.3	9.1	8.6
Magnesium (Water Soluble)	N	2120	g/l	0.010	< 0.010			< 0.010
Sulphate (2:1 Water Soluble) as SO4	M	2120	g/l	0.010	0.62			0.38
Total Sulphur	M	2175	%	0.010	0.44			0.41
Chloride (Water Soluble)	M	2220	g/l	0.010	0.015			0.011
Nitrate (Water Soluble)	N	2220	g/l	0.010	0.023			< 0.010
Cyanide (Total)	M	2300	mg/kg	0.50	3.5	2.8	1.5	< 0.50
Ammoniacal Nitrogen	M	2425	mg/kg	0.50	0.86	1.9	3.3	< 0.50
Ammonium (Water Soluble)	M	2220	g/l	0.01	< 0.01			< 0.01
Iron (Total)	N	2430	mg/kg	100	27000	27000	25000	27000
Sulphate (Acid Soluble)	U	2430	%	0.010	0.18			0.15
Arsenic	M	2455	mg/kg	0.5	3.6	3.6	3.8	11
Cadmium	M	2455	mg/kg	0.10	0.75	0.65	0.83	0.58
Chromium	M	2455	mg/kg	0.5	650	200	56	57
Manganese	M	2455	mg/kg	1.0	18000	8900	3500	3300
Copper	M	2455	mg/kg	0.50	14	13	13	31
Mercury	M	2455	mg/kg	0.05	0.11	0.09	0.11	0.66
Nickel	M	2455	mg/kg	0.50	8.7	8.3	9.6	21
Lead	M	2455	mg/kg	0.50	100	84	120	110
Selenium	M	2455	mg/kg	0.25	0.86	0.67	0.65	0.84
Vanadium	U	2455	mg/kg	0.5	300	390	71	67
Zinc	M	2455	mg/kg	0.50	320	250	370	340
Organic Matter	M	2625	%	0.40	24	41	36	9.5
Aliphatic TPH >C5-C6	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C6-C8	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C8-C10	M	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C10-C12	M	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C12-C16	M	2680	mg/kg	1.0	< 1.0	4.3	< 1.0	< 1.0

Results - Soil

Project: P17-480

Client: Rodgers Leask Environmental			**Chemtest Job No.:**		22-22344	22-22344	22-22344	22-22344
Quotation No.: Q21-24056			**Chemtest Sample ID.:**		1449059	1449060	1449061	1449062
			Sample Location:		BP-SV49	BP-SV50	BP-SV51	BP-SV52
			Sample Type:		SOIL	SOIL	SOIL	SOIL
			Top Depth (m):		0.2	0.2	0.2	0.2
			Date Sampled:		14-Jun-2022	14-Jun-2022	14-Jun-2022	14-Jun-2022
			Asbestos Lab:		NEW-ASB	NEW-ASB	NEW-ASB	NEW-ASB
Determinand	**Accred.**	**SOP**	**Units**	**LOD**				
Aliphatic TPH >C16-C21	M	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C21-C35	M	2680	mg/kg	1.0	< 1.0	60	< 1.0	< 1.0
Aliphatic TPH >C35-C44	N	2680	mg/kg	1.0	< 1.0	20	45	< 1.0
Total Aliphatic Hydrocarbons	N	2680	mg/kg	5.0	< 5.0	84	45	< 5.0
Aromatic TPH >C5-C7	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C7-C8	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C8-C10	M	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C10-C12	M	2680	mg/kg	1.0	< 1.0	11	< 1.0	< 1.0
Aromatic TPH >C12-C16	M	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C16-C21	U	2680	mg/kg	1.0	21	45	8.4	< 1.0
Aromatic TPH >C21-C35	M	2680	mg/kg	1.0	110	300	55	< 1.0
Aromatic TPH >C35-C44	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Total Aromatic Hydrocarbons	N	2680	mg/kg	5.0	130	350	64	< 5.0
Total Petroleum Hydrocarbons	N	2680	mg/kg	10.0	130	440	110	< 10
Benzene	M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Toluene	M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Ethylbenzene	M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
m & p-Xylene	M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
o-Xylene	M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Methyl Tert-Butyl Ether	M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Naphthalene	M	2800	mg/kg	0.10	7.6	17	22	< 0.10
Acenaphthylene	N	2800	mg/kg	0.10	3.3	5.2	4.5	< 0.10
Acenaphthene	M	2800	mg/kg	0.10	0.82	0.85	0.67	< 0.10
Fluorene	M	2800	mg/kg	0.10	3.2	6.6	4.1	< 0.10
Phenanthrene	M	2800	mg/kg	0.10	21	37	26	0.80
Anthracene	M	2800	mg/kg	0.10	6.0	8.8	6.0	0.25
Fluoranthene	M	2800	mg/kg	0.10	37	47	35	1.3
Pyrene	M	2800	mg/kg	0.10	24	31	23	1.0
Benzo[a]anthracene	M	2800	mg/kg	0.10	15	20	16	0.70
Chrysene	M	2800	mg/kg	0.10	16	22	18	0.57
Benzo[b]fluoranthene	M	2800	mg/kg	0.10	21	27	22	1.1
Benzo[k]fluoranthene	M	2800	mg/kg	0.10	7.1	9.3	7.6	0.34
Benzo[a]pyrene	M	2800	mg/kg	0.10	15	20	17	0.73
Indeno(1,2,3-c,d)Pyrene	M	2800	mg/kg	0.10	12	15	13	< 0.10
Dibenz(a,h)Anthracene	N	2800	mg/kg	0.10	2.3	3.2	2.4	< 0.10
Benzo[g,h,i]perylene	M	2800	mg/kg	0.10	9.5	12	10	< 0.10
Total Of 16 PAH's	N	2800	mg/kg	2.0	200	280	230	6.8
Resorcinol	M	2920	mg/kg	0.020	< 0.020	< 0.020	< 0.020	< 0.020

Results - Soil

Project: P17-480

Client: Rodgers Leask Environmental			**Chemtest Job No.:**		22-22344	22-22344	22-22344	22-22344
Quotation No.: Q21-24056			**Chemtest Sample ID.:**		1449059	1449060	1449061	1449062
			Sample Location:		BP-SV49	BP-SV50	BP-SV51	BP-SV52
			Sample Type:		SOIL	SOIL	SOIL	SOIL
			Top Depth (m):		0.2	0.2	0.2	0.2
			Date Sampled:		14-Jun-2022	14-Jun-2022	14-Jun-2022	14-Jun-2022
			Asbestos Lab:		NEW-ASB	NEW-ASB	NEW-ASB	NEW-ASB
Determinand	**Accred.**	**SOP**	**Units**	**LOD**				
Phenol	M	2920	mg/kg	0.020	< 0.020	< 0.020	< 0.020	< 0.020
Cresols	M	2920	mg/kg	0.020	< 0.020	< 0.020	< 0.020	< 0.020
Xylenols	M	2920	mg/kg	0.020	< 0.020	< 0.020	< 0.020	< 0.020
1-Naphthol	N	2920	mg/kg	0.020	< 0.020	< 0.020	< 0.020	< 0.020
Trimethylphenols	M	2920	mg/kg	0.020	< 0.020	< 0.020	< 0.020	< 0.020
Total Phenols	M	2920	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10

Test Methods

SOP	Title	Parameters included	Method summary
2010	pH Value of Soils	pH	pH Meter
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <37°C.
2040	Soil Description(Requirement of MCERTS)	Soil description	As received soil is described based upon BS5930
2120	Water Soluble Boron, Sulphate, Magnesium & Chromium	Boron; Sulphate; Magnesium; Chromium	Aqueous extraction / ICP-OES
2175	Total Sulphur in Soils	Total Sulphur	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.
2192	Asbestos	Asbestos	Polarised light microscopy / Gravimetry
2220	Water soluble Chloride in Soils	Chloride	Aqueous extraction and measuremernt by 'Aquakem 600' Discrete Analyser using ferric nitrate / mercuric thiocyanate.
2300	Cyanides & Thiocyanate in Soils	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Allkaline extraction followed by colorimetric determination using Automated Flow Injection Analyser.
2425	Extractable Ammonium in soils	Ammonium	Extraction with potassium chloride solution / analysis by 'Aquakem 600' Discrete Analyser using sodium salicylate and sodium dichloroisocyanurate.
2430	Total Sulphate in soils	Total Sulphate	Acid digestion followed by determination of sulphate in extract by ICP-OES.
2625	Total Organic Carbon in Soils	Total organic Carbon (TOC)	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.
2680	TPH A/A Split	Aliphatics: >C5–C6, >C6–C8,>C8–C10, >C10–C12, >C12–C16, >C16–C21, >C21–C35, >C35– C44Aromatics: >C5–C7, >C7–C8, >C8– C10, >C10–C12, >C12–C16, >C16– C21, >C21– C35, >C35– C44	Dichloromethane extraction / GCxGC FID detection
2760	Volatile Organic Compounds (VOCs) in Soils by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics.(cf. USEPA Method 8260)*please refer to UKAS schedule	Automated headspace gas chromatographic (GC) analysis of a soil sample, as received, with mass spectrometric (MS) detection of volatile organic compounds.
2800	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Soil by GC-MS	Acenaphthene*; Acenaphthylene; Anthracene*; Benzo[a]Anthracene*; Benzo[a]Pyrene*; Benzo[b]Fluoranthene*; Benzo[ghi]Perylene*; Benzo[k]Fluoranthene; Chrysene*; Dibenz[ah]Anthracene; Fluoranthene*; Fluorene*; Indeno[123cd]Pyrene*; Naphthalene*; Phenanthrene*; Pyrene*	Dichloromethane extraction / GC-MS
2920	Phenols in Soils by HPLC	Phenolic compounds including Resorcinol, Phenol, Methylphenols, Dimethylphenols, 1-Naphthol and TrimethylphenolsNote: chlorophenols are excluded.	60:40 methanol/water mixture extraction, followed by HPLC determination using electrochemical detection.

Report Information

Key

U	UKAS accredited
M	MCERTS and UKAS accredited
N	Unaccredited
S	This analysis has been subcontracted to a UKAS accredited laboratory that is accredited for this analysis
SN	This analysis has been subcontracted to a UKAS accredited laboratory that is not accredited for this analysis
T	This analysis has been subcontracted to an unaccredited laboratory
I/S	Insufficient Sample
U/S	Unsuitable Sample
N/E	not evaluated
<	"less than"
>	"greater than"
SOP	Standard operating procedure
LOD	Limit of detection

Comments or interpretations are beyond the scope of UKAS accreditation
The results relate only to the items tested
Uncertainty of measurement for the determinands tested are available upon request
None of the results in this report have been recovery corrected
All results are expressed on a dry weight basis

The following tests were analysed on samples as received and the results subsequently corrected to a dry weight basis TPH, BTEX, VOCs, SVOCs, PCBs, Phenols

For all other tests the samples were dried at < 37°C prior to analysis
All Asbestos testing is performed at the indicated laboratory
Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1

Sample Deviation Codes

A - Date of sampling not supplied
B - Sample age exceeds stability time (sampling to extraction)
C - Sample not received in appropriate containers
D - Broken Container
E - Insufficient Sample (Applies to LOI in Trommel Fines Only)

Sample Retention and Disposal

All soil samples will be retained for a period of 30 days from the date of receipt
All water samples will be retained for 14 days from the date of receipt
Charges may apply to extended sample storage

If you require extended retention of samples, please email your requirements to:
customerservices@chemtest.com

Eurofins Chemtest Ltd
Depot Road
Newmarket
CB8 0AL
Tel: 01638 606070
Email: info@chemtest.com

Amended Report

Report No.:	22-31301-2		
Initial Date of Issue:	22-Aug-2022	**Date of Re-Issue:**	23-Aug-2022
Client	Rodgers Leask Environmental		
Client Address:	Office 225 2430/2440 Aztec West Almoundsbury Bristol BS32 4AQ		
Contact(s):	Caitlin Davies Chris Wilson David McCarroll		
Project	P17-480		
Quotation No.:	Q22-28243	**Date Received:**	17-Aug-2022
Order No.:	RLL 22-03-18	**Date Instructed:**	17-Aug-2022
No. of Samples:	7		
Turnaround (Wkdays):	9	**Results Due:**	30-Aug-2022
Date Approved:	23-Aug-2022		
Approved By:			
Details:	Stuart Henderson, Technical Manager		

Results - Soil

Project: P17-480

Client: Rodgers Leask Environmental		**Chemtest Job No.:**			22-31301	22-31301	22-31301	22-31301	22-31301	22-31301	22-31301
Quotation No.: Q22-28243		**Chemtest Sample ID.:**			1488903	1488904	1488905	1488906	1488907	1488908	1488909
		Client Sample ID.:			BP-SV33	BP-SV34	BP-SV35	BP-SV36	BP-SV37	BP-SV38	BP-SV39
		Sample Type:			SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
		Date Sampled:			15-Aug-2022	15-Aug-2022	15-Aug-2022	15-Aug-2022	15-Aug-2022	15-Aug-2022	15-Aug-2022
		Asbestos Lab:			DURHAM	DURHAM	DURHAM	DURHAM	DURHAM	DURHAM	DURHAM
Determinand	**Accred.**	**SOP**	**Units**	**LOD**							
ACM Type	U	2192		N/A	-	-	-	Fibres/Clumps	-	-	-
Asbestos Identification	U	2192		N/A	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	Chrysotile	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected
Asbestos by Gravimetry	U	2192	%	0.001				0.006			
Total Asbestos	U	2192	%	0.001				0.006			
Moisture	N	2030	%	0.020	7.6	11	2.8	0.41	0.17	0.48	7.4
Soil Colour	N	2040		N/A	Brown	Brown	Brown	Brown	Brown	Brown	Brown
Other Material	N	2040		N/A	Stones	Stones	Stones	Stones	Stones	Stones	Stones
Soil Texture	N	2040		N/A	Sand	Sand	Sand	Sand	Sand	Sand	Sand
pH	M	2010		4.0	11.8	9.9	10.9	9.4	10.0	9.6	9.8
Sulphate (2:1 Water Soluble) as SO4	M	2120	g/l	0.010	0.24			0.49			0.30
Total Sulphur	M	2175	%	0.010	5.2			0.30			0.40
Chloride (Water Soluble)	M	2220	g/l	0.010	< 0.010			0.016			0.013
Nitrate (Water Soluble)	N	2220	g/l	0.010	0.044			0.048			0.021
Cyanide (Total)	M	2300	mg/kg	0.50	1.4	1.6	2.1	1.2	0.80	2.8	0.80
Ammoniacal Nitrogen	M	2425	mg/kg	0.50	2.4	1.9	< 0.50	0.72	2.7	0.86	< 0.50
Iron (Total)	N	2430	mg/kg	100	45000	51000	50000	45000	33000	23000	57000
Sulphate (Acid Soluble)	U	2430	%	0.010	0.26			0.22			0.32
Arsenic	M	2455	mg/kg	0.5	< 0.5	6.6	8.7	8.1	9.3	8.7	7.4
Cadmium	M	2455	mg/kg	0.10	< 0.10	0.62	0.93	0.39	0.56	0.81	0.58
Chromium	M	2455	mg/kg	0.5	1.3	300	140	180	130	140	52
Manganese	M	2455	mg/kg	1.0	110	5600	9400	9100	5900	5500	1900
Copper	M	2455	mg/kg	0.50	1.6	22	99	17	20	22	15
Mercury	M	2455	mg/kg	0.05	< 0.05	0.11	0.13	0.16	0.16	0.13	0.09
Nickel	M	2455	mg/kg	0.50	1.3	17	21	15	19	17	14
Lead	M	2455	mg/kg	0.50	1.4	85	110	72	100	110	49
Selenium	M	2455	mg/kg	0.25	< 0.25	0.79	0.90	1.2	1.4	1.1	1.1
Vanadium	U	2455	mg/kg	0.5	1.8	380	150	400	210	150	59
Zinc	M	2455	mg/kg	0.50	7.5	320	530	200	240	400	150
Organic Matter	M	2625	%	0.40	45	31	21	32	34	21	46
Aliphatic TPH >C5-C6	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C6-C8	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C8-C10	M	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C10-C12	M	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C12-C16	M	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C16-C21	M	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C21-C35	M	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C35-C44	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Total Aliphatic Hydrocarbons	N	2680	mg/kg	5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0

Results - Soil

Project: P17-480

Client: Rodgers Leask Environmental			**Chemtest Job No.:**		22-31301	22-31301	22-31301	22-31301	22-31301	22-31301	22-31301
Quotation No.: Q22-28243			**Chemtest Sample ID.:**		1488903	1488904	1488905	1488906	1488907	1488908	1488909
			Client Sample ID.:		BP-SV33	BP-SV34	BP-SV35	BP-SV36	BP-SV37	BP-SV38	BP-SV39
			Sample Type:		SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
			Date Sampled:		15-Aug-2022	15-Aug-2022	15-Aug-2022	15-Aug-2022	15-Aug-2022	15-Aug-2022	15-Aug-2022
			Asbestos Lab:		DURHAM	DURHAM	DURHAM	DURHAM	DURHAM	DURHAM	DURHAM
Determinand	**Accred.**	**SOP**	**Units**	**LOD**							
Aromatic TPH >C5-C7	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C7-C8	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C8-C10	M	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C10-C12	M	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C12-C16	M	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C16-C21	U	2680	mg/kg	1.0	< 1.0	< 1.0	52	11	58	27	17
Aromatic TPH >C21-C35	M	2680	mg/kg	1.0	< 1.0	< 1.0	270	210	480	240	180
Aromatic TPH >C35-C44	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Total Aromatic Hydrocarbons	N	2680	mg/kg	5.0	< 5.0	< 5.0	320	220	540	260	200
Total Petroleum Hydrocarbons	N	2680	mg/kg	10.0	< 10	< 10	320	220	540	260	200
Benzene	M	2760	µg/kg	1.0	< 1.0	1.7	1.3	1.3	1.4	< 1.0	1.4
Toluene	M	2760	µg/kg	1.0	2.2	9.2	4.0	6.5	7.6	5.1	4.8
Ethylbenzene	M	2760	µg/kg	1.0	3.5	17	6.5	17	17	12	9.4
m & p-Xylene	M	2760	µg/kg	1.0	12	52	21	50	52	37	32
o-Xylene	M	2760	µg/kg	1.0	2.2	9.5	< 1.0	8.7	7.7	5.5	6.1
Methyl Tert-Butyl Ether	M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Naphthalene	M	2800	mg/kg	0.10	2.9	7.8	14	9.6	21	8.1	17
Acenaphthylene	N	2800	mg/kg	0.10	0.91	2.3	1.9	2.3	4.0	1.9	2.5
Acenaphthene	M	2800	mg/kg	0.10	0.21	0.22	0.21	0.27	0.52	0.26	0.32
Fluorene	M	2800	mg/kg	0.10	0.47	1.9	1.8	1.5	2.7	1.1	2.3
Phenanthrene	M	2800	mg/kg	0.10	4.6	12	18	11	19	6.6	16
Anthracene	M	2800	mg/kg	0.10	1.6	4.6	5.8	3.3	6.7	3.3	4.5
Fluoranthene	M	2800	mg/kg	0.10	8.1	26	29	21	37	14	20
Pyrene	M	2800	mg/kg	0.10	6.0	18	20	15	26	10	13
Benzo[a]anthracene	M	2800	mg/kg	0.10	4.4	12	12	12	21	8.4	9.4
Chrysene	M	2800	mg/kg	0.10	5.9	12	11	13	22	8.8	9.4
Benzo[b]fluoranthene	M	2800	mg/kg	0.10	6.6	16	14	17	30	12	12
Benzo[k]fluoranthene	M	2800	mg/kg	0.10	2.4	5.9	5.0	6.3	11	4.3	4.3
Benzo[a]pyrene	M	2800	mg/kg	0.10	4.6	11	11	12	22	8.5	8.4
Indeno(1,2,3-c,d)Pyrene	M	2800	mg/kg	0.10	3.1	7.3	6.9	8.6	16	6.1	5.7
Dibenz(a,h)Anthracene	N	2800	mg/kg	0.10	0.66	1.5	1.4	1.7	3.6	1.3	1.3
Benzo[g,h,i]perylene	M	2800	mg/kg	0.10	3.2	6.5	6.2	7.6	13	5.3	4.7
Total Of 16 PAH's	N	2800	mg/kg	2.0	56	150	160	140	260	100	130
Resorcinol	M	2920	mg/kg	0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020
Phenol	M	2920	mg/kg	0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020
Cresols	M	2920	mg/kg	0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020
Xylenols	M	2920	mg/kg	0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020
1-Naphthol	N	2920	mg/kg	0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020
Trimethylphenols	M	2920	mg/kg	0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020

Results - Soil

Project: P17-480

Client: Rodgers Leask Environmental			**Chemtest Job No.:**		22-31301	22-31301	22-31301	22-31301	22-31301	22-31301	22-31301
Quotation No.: Q22-28243			**Chemtest Sample ID.:**		1488903	1488904	1488905	1488906	1488907	1488908	1488909
			Client Sample ID.:		BP-SV33	BP-SV34	BP-SV35	BP-SV36	BP-SV37	BP-SV38	BP-SV39
			Sample Type:		SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
			Date Sampled:		15-Aug-2022	15-Aug-2022	15-Aug-2022	15-Aug-2022	15-Aug-2022	15-Aug-2022	15-Aug-2022
			Asbestos Lab:		DURHAM	DURHAM	DURHAM	DURHAM	DURHAM	DURHAM	DURHAM
Determinand	**Accred.**	**SOP**	**Units**	**LOD**							
Total Phenols	M	2920	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10

Test Methods

SOP	Title	Parameters included	Method summary
2010	pH Value of Soils	pH	pH Meter
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <37°C.
2040	Soil Description(Requirement of MCERTS)	Soil description	As received soil is described based upon BS5930
2120	Water Soluble Boron, Sulphate, Magnesium & Chromium	Boron; Sulphate; Magnesium; Chromium	Aqueous extraction / ICP-OES
2175	Total Sulphur in Soils	Total Sulphur	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.
2192	Asbestos	Asbestos	Polarised light microscopy / Gravimetry
2220	Water soluble Chloride in Soils	Chloride	Aqueous extraction and measuremernt by 'Aquakem 600' Discrete Analyser using ferric nitrate / mercuric thiocyanate.
2300	Cyanides & Thiocyanate in Soils	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Allkaline extraction followed by colorimetric determination using Automated Flow Injection Analyser.
2425	Extractable Ammonium in soils	Ammonium	Extraction with potassium chloride solution / analysis by 'Aquakem 600' Discrete Analyser using sodium salicylate and sodium dichloroisocyanurate.
2430	Total Sulphate in soils	Total Sulphate	Acid digestion followed by determination of sulphate in extract by ICP-OES.
2625	Total Organic Carbon in Soils	Total organic Carbon (TOC)	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.
2680	TPH A/A Split	Aliphatics: >C5–C6, >C6–C8,>C8–C10, >C10–C12, >C12–C16, >C16–C21, >C21–C35, >C35– C44Aromatics: >C5–C7, >C7–C8, >C8– C10, >C10–C12, >C12–C16, >C16– C21, >C21– C35, >C35– C44	Dichloromethane extraction / GCxGC FID detection
2760	Volatile Organic Compounds (VOCs) in Soils by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics.(cf. USEPA Method 8260)*please refer to UKAS schedule	Automated headspace gas chromatographic (GC) analysis of a soil sample, as received, with mass spectrometric (MS) detection of volatile organic compounds.
2800	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Soil by GC-MS	Acenaphthene*; Acenaphthylene; Anthracene*; Benzo[a]Anthracene*; Benzo[a]Pyrene*; Benzo[b]Fluoranthene*; Benzo[ghi]Perylene*; Benzo[k]Fluoranthene; Chrysene*; Dibenz[ah]Anthracene; Fluoranthene*; Fluorene*; Indeno[123cd]Pyrene*; Naphthalene*; Phenanthrene*; Pyrene*	Dichloromethane extraction / GC-MS
2920	Phenols in Soils by HPLC	Phenolic compounds including Resorcinol, Phenol, Methylphenols, Dimethylphenols, 1-Naphthol and TrimethylphenolsNote: chlorophenols are excluded.	60:40 methanol/water mixture extraction, followed by HPLC determination using electrochemical detection.

Report Information

Key

U	UKAS accredited
M	MCERTS and UKAS accredited
N	Unaccredited
S	This analysis has been subcontracted to a UKAS accredited laboratory that is accredited for this analysis
SN	This analysis has been subcontracted to a UKAS accredited laboratory that is not accredited for this analysis
T	This analysis has been subcontracted to an unaccredited laboratory
I/S	Insufficient Sample
U/S	Unsuitable Sample
N/E	not evaluated
<	"less than"
>	"greater than"
SOP	Standard operating procedure
LOD	Limit of detection

Comments or interpretations are beyond the scope of UKAS accreditation
The results relate only to the items tested
Uncertainty of measurement for the determinands tested are available upon request
None of the results in this report have been recovery corrected
All results are expressed on a dry weight basis

The following tests were analysed on samples as received and the results subsequently corrected to a dry weight basis TPH, BTEX, VOCs, SVOCs, PCBs, Phenols

For all other tests the samples were dried at < 37°C prior to analysis
All Asbestos testing is performed at the indicated laboratory
Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1

Sample Deviation Codes

A - Date of sampling not supplied
B - Sample age exceeds stability time (sampling to extraction)
C - Sample not received in appropriate containers
D - Broken Container
E - Insufficient Sample (Applies to LOI in Trommel Fines Only)

Sample Retention and Disposal

All soil samples will be retained for a period of 30 days from the date of receipt
All water samples will be retained for 14 days from the date of receipt
Charges may apply to extended sample storage

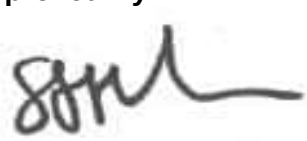
If you require extended retention of samples, please email your requirements to:
customerservices@chemtest.com

eurofins | Chemtest
Eurofins Chemtest Ltd
Depot Road
Newmarket
CB8 0AL
Tel: 01638 606070
Email: info@chemtest.com

Amended Report

Report No.:	23-00749-2		
Initial Date of Issue:	25-Jan-2023	**Date of Re-Issue:**	25-Jan-2023
Client	Rodgers Leask Environmental		
Client Address:	Office 225 2430/2440 Aztec West Almoundsbury Bristol BS32 4AQ		
Contact(s):	Chris Wilson David McCarroll Rebecca Marsden		
Project	P17-480		
Quotation No.:	Q22-28243	**Date Received:**	12-Jan-2023
Order No.:	RLL 22-09-05	**Date Instructed:**	12-Jan-2023
No. of Samples:	8		
Turnaround (Wkdays):	14	**Results Due:**	31-Jan-2023
Date Approved:	25-Jan-2023		

Approved By:



Details: Stuart Henderson, Technical Manager

Results - Soil

Project: P17-480

Client: Rodgers Leask Environmental		**Chemtest Job No.:**			23-00749	23-00749	23-00749	23-00749	23-00749	23-00749	23-00749	23-00749
Quotation No.: Q22-28243		**Chemtest Sample ID.:**			1572432	1572433	1572434	1572435	1572436	1572437	1572438	1572439
		Client Sample ID.:			BP-SV21	BP-SV32	BP-SV19	BP-SV20	BP-SV22	BP-SV23	BP-SV24	BP-SV25
		Sample Type:			SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
		Top Depth (m):			0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
		Bottom Depth (m):			0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
		Date Sampled:			10-Jan-2023	10-Jan-2023	10-Jan-2023	10-Jan-2023	10-Jan-2023	10-Jan-2023	10-Jan-2023	10-Jan-2023
		Asbestos Lab:			COVENTRY	COVENTRY	COVENTRY	COVENTRY	COVENTRY	COVENTRY	COVENTRY	COVENTRY
Determinand	**Accred.**	**SOP**	**Units**	**LOD**								
ACM Type	U	2192		N/A	-	-	-	-	Fibres/Clumps	-	-	Fibres/Clumps
Asbestos Identification	U	2192		N/A	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	Chrysotile	No Asbestos Detected	No Asbestos Detected	Chrysotile
Asbestos by Gravimetry	U	2192	%	0.001					0.005			0.006
Total Asbestos	U	2192	%	0.001					0.005			0.006
Moisture	N	2030	%	0.020	9.2	14	8.6	11	14	18	12	8.8
Soil Colour	N	2040		N/A	Black	Black	Black	Black	Black	Black	Brown	Brown
Other Material	N	2040		N/A	Stones	Stones	Stones	Stones	Stones	Stones	Stones	Stones
Soil Texture	N	2040		N/A	Sand	Sand	Sand	Sand	Sand	Sand	Sand	Sand
pH	M	2010		4.0	10.2	10.8	9.5	10.8	10.0	9.9	10.2	10.5
Sulphate (2:1 Water Soluble) as SO4	M	2120	g/l	0.010	0.67	0.89						
Total Sulphur	M	2175	%	0.010	0.32	0.43						
Chloride (Water Soluble)	M	2220	g/l	0.010	< 0.010	< 0.010						
Nitrate (Water Soluble)	N	2220	g/l	0.010	< 0.010	< 0.010						
Cyanide (Total)	M	2300	mg/kg	0.50	2.1	1.5	1.8	1.5	1.8	1.9	1.8	2.0
Ammoniacal Nitrogen	M	2425	mg/kg	0.50	2.7	2.5	3.2	2.8	2.6	2.4	3.0	2.4
Iron (Total)	N	2430	mg/kg	100	39000	36000	53000	35000	59000	50000	42000	48000
Arsenic	M	2455	mg/kg	0.5	7.4	5.3	11	8.8	10	7.1	7.4	6.0
Cadmium	M	2455	mg/kg	0.10	0.73	0.35	0.76	0.68	0.97	0.80	0.89	0.59
Chromium	M	2455	mg/kg	0.5	180	210	230	110	420	260	180	250
Manganese	M	2455	mg/kg	1.0	8800	11000	13000	5800	17000	12000	9300	12000
Copper	M	2455	mg/kg	0.50	20	22	45	18	30	22	22	19
Mercury	M	2455	mg/kg	0.05	0.12	0.10	0.18	0.13	0.21	0.25	0.30	0.16
Nickel	M	2455	mg/kg	0.50	16	15	34	16	23	17	18	14
Lead	M	2455	mg/kg	0.50	77	43	100	77	140	110	120	79
Selenium	M	2455	mg/kg	0.25	1.3	1.2	1.8	1.2	1.7	1.2	1.6	1.1
Vanadium	U	2455	mg/kg	0.5	210	260	340	150	350	330	200	370
Zinc	M	2455	mg/kg	0.50	260	110	330	250	370	290	330	220
Aliphatic VPH >C5-C6	M	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Aliphatic VPH >C6-C7	M	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Aliphatic VPH >C7-C8	M	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Aliphatic VPH >C8-C10	M	2780	mg/kg	0.05	0.23	0.93	0.47	0.21	0.51	1.1	0.38	0.69
Total Aliphatic VPH >C5-C10	M	2780	mg/kg	0.25	< 0.25	0.46	< 0.25	< 0.25	0.26	0.53	< 0.25	0.34
Aliphatic EPH >C10-C12	M	2690	mg/kg	2.00	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Aliphatic EPH >C12-C16	M	2690	mg/kg	1.00	1.0	< 1.0	< 1.0	< 1.0	1.9	< 1.0	1.3	2.5
Aliphatic EPH >C16-C21	M	2690	mg/kg	2.00	3.2	4.5	< 2.0	2.4	10	5.2	4.1	4.6
Aliphatic EPH >C21-C35	M	2690	mg/kg	3.00	5.8	4.6	< 3.0	6.0	13	3.4	4.7	9.1

Results - Soil

Project: P17-480

Client: Rodgers Leask Environmental			**Chemtest Job No.:**		23-00749	23-00749	23-00749	23-00749	23-00749	23-00749	23-00749	23-00749
Quotation No.: Q22-28243			**Chemtest Sample ID.:**		1572432	1572433	1572434	1572435	1572436	1572437	1572438	1572439
			Client Sample ID.:		BP-SV21	BP-SV32	BP-SV19	BP-SV20	BP-SV22	BP-SV23	BP-SV24	BP-SV25
			Sample Type:		SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
			Top Depth (m):		0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
			Bottom Depth (m):		0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
			Date Sampled:		10-Jan-2023	10-Jan-2023	10-Jan-2023	10-Jan-2023	10-Jan-2023	10-Jan-2023	10-Jan-2023	10-Jan-2023
			Asbestos Lab:		COVENTRY	COVENTRY	COVENTRY	COVENTRY	COVENTRY	COVENTRY	COVENTRY	COVENTRY
Determinand	**Accred.**	**SOP**	**Units**	**LOD**								
Aliphatic EPH >C35-C40	N	2690	mg/kg	1.00	< 1.0	< 1.0	< 1.0	1.6	1.3	< 1.0	< 1.0	19
Total Aliphatic EPH >C10-C35	M	2690	mg/kg	5.00	10	10	< 5.0	9.6	26	9.4	10	18
Total Aliphatic EPH >C10-C40	U	2690	mg/kg	10.00	< 10	< 10	< 10	< 10	< 10	< 10	< 10	37
Aromatic VPH >C5-C7	M	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Aromatic VPH >C7-C8	M	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Aromatic VPH >C8-C10	M	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Total Aromatic VPH >C5-C10	M	2780	mg/kg	0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25
Aromatic EPH >C10-C12	M	2690	mg/kg	1.00	1.1	< 1.0	< 1.0	< 1.0	3.0	< 1.0	1.5	12
Aromatic EPH >C12-C16	M	2690	mg/kg	1.00	2.9	2.0	2.0	1.1	4.5	1.5	2.8	15
Aromatic EPH >C16-C21	N	2690	mg/kg	2.00	36	11	14	8.9	50	14	24	31
Aromatic EPH >C21-C35	M	2690	mg/kg	2.00	37	10	23	10	80	16	27	65
Aromatic EPH >C35-C40	N	2690	mg/kg	1.00	1.6	< 1.0	< 1.0	< 1.0	3.8	< 1.0	1.4	160
Total Aromatic EPH >C10-C35	M	2690	mg/kg	5.00	76	24	40	21	140	33	55	120
Total Aromatic EPH >C10-C40	U	2690	mg/kg	10.00	16	< 10	< 10	< 10	28	< 10	11	280
Total VPH >C5-C10	M	2780	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	0.53	< 0.50	< 0.50
Total EPH >C10-C35	M	2690	mg/kg	10.00	86	34	45	30	160	42	65	140
Total EPH >C10-C40	U	2690	mg/kg	10.00	18	< 10	< 10	< 10	34	< 10	13	310
Organic Matter	M	2625	%	0.40	13	30	15	7.5	20	17	20	17
Benzene	M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Toluene	M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Ethylbenzene	M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
m & p-Xylene	M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
o-Xylene	M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Methyl Tert-Butyl Ether	M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Naphthalene	M	2800	mg/kg	0.10	6.6	19	6.6	7.3	9.8	14	12	17
Acenaphthylene	N	2800	mg/kg	0.10	1.5	2.3	2.2	1.3	1.9	2.9	2.6	2.8
Acenaphthene	M	2800	mg/kg	0.10	0.26	0.54	0.28	0.30	0.30	0.51	0.38	0.44
Fluorene	M	2800	mg/kg	0.10	1.8	2.2	1.8	1.5	1.3	2.5	1.9	2.1
Phenanthrene	M	2800	mg/kg	0.10	12	16	15	9.2	11	20	15	17
Anthracene	M	2800	mg/kg	0.10	3.7	3.8	4.4	2.7	3.4	5.6	5.0	4.7
Fluoranthene	M	2800	mg/kg	0.10	18	20	25	13	17	28	23	25
Pyrene	M	2800	mg/kg	0.10	12	13	17	9.2	13	20	16	18
Benzo[a]anthracene	M	2800	mg/kg	0.10	7.1	8.7	10	5.6	8.7	13	11	11
Chrysene	M	2800	mg/kg	0.10	7.5	9.3	10	5.7	8.9	14	12	11
Benzo[b]fluoranthene	M	2800	mg/kg	0.10	9.4	12	12	7.5	12	17	15	15
Benzo[k]fluoranthene	M	2800	mg/kg	0.10	3.4	4.8	4.2	2.5	4.0	5.9	5.1	5.3
Benzo[a]pyrene	M	2800	mg/kg	0.10	7.0	8.5	8.4	5.5	8.6	12	11	10

Results - Soil

Project: P17-480

Client: Rodgers Leask Environmental			**Chemtest Job No.:**		23-00749	23-00749	23-00749	23-00749	23-00749	23-00749	23-00749	23-00749
Quotation No.: Q22-28243			**Chemtest Sample ID.:**		1572432	1572433	1572434	1572435	1572436	1572437	1572438	1572439
			Client Sample ID.:		BP-SV21	BP-SV32	BP-SV19	BP-SV20	BP-SV22	BP-SV23	BP-SV24	BP-SV25
			Sample Type:		SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
			Top Depth (m):		0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
			Bottom Depth (m):		0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
			Date Sampled:		10-Jan-2023	10-Jan-2023	10-Jan-2023	10-Jan-2023	10-Jan-2023	10-Jan-2023	10-Jan-2023	10-Jan-2023
			Asbestos Lab:		COVENTRY	COVENTRY	COVENTRY	COVENTRY	COVENTRY	COVENTRY	COVENTRY	COVENTRY
Determinand	**Accred.**	**SOP**	**Units**	**LOD**								
Indeno(1,2,3-c,d)Pyrene	M	2800	mg/kg	0.10	6.0	6.4	7.1	4.5	7.1	9.5	8.8	9.1
Dibenz(a,h)Anthracene	N	2800	mg/kg	0.10	1.1	1.5	1.3	0.69	1.3	2.0	1.8	1.6
Benzo[g,h,i]perylene	M	2800	mg/kg	0.10	4.6	5.3	5.4	3.6	5.6	8.0	7.2	6.9
Total Of 16 PAH's	N	2800	mg/kg	2.0	100	130	130	80	110	170	150	160
Resorcinol	M	2920	mg/kg	0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020
Phenol	M	2920	mg/kg	0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020
Cresols	M	2920	mg/kg	0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020
Xylenols	M	2920	mg/kg	0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020
1-Naphthol	N	2920	mg/kg	0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020
Trimethylphenols	M	2920	mg/kg	0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020
Total Phenols	M	2920	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10

Test Methods

SOP	Title	Parameters included	Method summary
2010	pH Value of Soils	pH	pH Meter
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <37°C.
2040	Soil Description(Requirement of MCERTS)	Soil description	As received soil is described based upon BS5930
2120	Water Soluble Boron, Sulphate, Magnesium & Chromium	Boron; Sulphate; Magnesium; Chromium	Aqueous extraction / ICP-OES
2175	Total Sulphur in Soils	Total Sulphur	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.
2192	Asbestos	Asbestos	Polarised light microscopy / Gravimetry
2220	Water soluble Chloride in Soils	Chloride	Aqueous extraction and measurememrnt by 'Aquakem 600' Discrete Analyser using ferric nitrate / mercuric thiocyanate.
2300	Cyanides & Thiocyanate in Soils	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Allkaline extraction followed by colorimetric determination using Automated Flow Injection Analyser.
2425	Extractable Ammonium in soils	Ammonium	Extraction with potassium chloride solution / analysis by 'Aquakem 600' Discrete Analyser using sodium salicylate and sodium dichloroisocyanurate.
2430	Total Sulphate in soils	Total Sulphate	Acid digestion followed by determination of sulphate in extract by ICP-OES.
2455	Acid Soluble Metals in Soils	Metals, including: Arsenic; Barium; Beryllium; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Vanadium; Zinc	Acid digestion followed by determination of metals in extract by ICP-MS.
2625	Total Organic Carbon in Soils	Total organic Carbon (TOC)	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.
2690	EPH A/A Split	Aliphatics: >C10–C12, >C12–C16, >C16–C21, >C21– C35, >C35– C40 Aromatics: >C10–C12, >C12–C16, >C16– C21, >C21– C35, >C35–C40	Acetone/Heptane extraction / GCxGC FID detection
2760	Volatile Organic Compounds (VOCs) in Soils by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics.(cf. USEPA Method 8260)*please refer to UKAS schedule	Automated headspace gas chromatographic (GC) analysis of a soil sample, as received, with mass spectrometric (MS) detection of volatile organic compounds.
2780	VPH A/A Split	Aliphatics: >C5–C6, >C6–C7,>C7–C8,>C8-C10 Aromatics: >C5–C7,>C7-C8,>C8–C10	Water extraction / Headspace GCxGC FID detection
2800	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Soil by GC-MS	Acenaphthene*; Acenaphthylene; Anthracene*; Benzo[a]Anthracene*; Benzo[a]Pyrene*; Benzo[b]Fluoranthene*; Benzo[ghi]Perylene*; Benzo[k]Fluoranthene; Chrysene*; Dibenz[ah]Anthracene; Fluoranthene*; Fluorene*; Indeno[123cd]Pyrene*; Naphthalene*; Phenanthrene*; Pyrene*	Dichloromethane extraction / GC-MS
2920	Phenols in Soils by HPLC	Phenolic compounds including Resorcinol, Phenol, Methylphenols, Dimethylphenols, 1-Naphthol and TrimethylphenolsNote: chlorophenols are excluded.	60:40 methanol/water mixture extraction, followed by HPLC determination using electrochemical detection.

Report Information

Key

U	UKAS accredited
M	MCERTS and UKAS accredited
N	Unaccredited
S	This analysis has been subcontracted to a UKAS accredited laboratory that is accredited for this analysis
SN	This analysis has been subcontracted to a UKAS accredited laboratory that is not accredited for this analysis
T	This analysis has been subcontracted to an unaccredited laboratory
I/S	Insufficient Sample
U/S	Unsuitable Sample
N/E	not evaluated
<	"less than"
>	"greater than"
SOP	Standard operating procedure
LOD	Limit of detection

Comments or interpretations are beyond the scope of UKAS accreditation
The results relate only to the items tested
Uncertainty of measurement for the determinands tested are available upon request
None of the results in this report have been recovery corrected
All results are expressed on a dry weight basis

The following tests were analysed on samples as received and the results subsequently corrected to a dry weight basis TPH, BTEX, VOCs, SVOCs, PCBs, Phenols

For all other tests the samples were dried at < 37°C prior to analysis
All Asbestos testing is performed at the indicated laboratory
Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1

Sample Deviation Codes

A - Date of sampling not supplied
B - Sample age exceeds stability time (sampling to extraction)
C - Sample not received in appropriate containers
D - Broken Container
E - Insufficient Sample (Applies to LOI in Trommel Fines Only)

Sample Retention and Disposal

All soil samples will be retained for a period of 30 days from the date of receipt
All water samples will be retained for 14 days from the date of receipt
Charges may apply to extended sample storage

If you require extended retention of samples, please email your requirements to:
customerservices@chemtest.com

Eurofins Chemtest Ltd
Depot Road
Newmarket
CB8 0AL
Tel: 01638 606070
Email: info@chemtest.com

Final Report

Report No.:	25-17612-1
Initial Date of Issue:	09-Jun-2025
Re-Issue Details:	
Client	*Rodgers Leask Environmental*
Client Address:	*1/100A Woodlands Court* *Ash Ridge Road* *Almondsbury* *Bristol* *BS32 4LB*
Contact(s):	*Amiee Meredith-Smith* *Chris Wilson* *David McCarroll* *Robert Kemm* *Ruth Hardy*
Project	*P17-480*
Quotation No.:	*Q25-37295*
Order No.:	23-02-10
No. of Samples:	*12*
Turnaround (Wkdays):	5
Date Approved:	09-Jun-2025
Approved By:	

Date Received: 28-May-2025

Date Instructed: 28-May-2025

Results Due: 03-Jun-2025

Details: David Smith, Technical Director

For details about application of accreditation to specific matrix types, please refer to the Table at the back of this report

Results - Soil

Project: P17-480

Client: Rodgers Leask Environmental			**Chemtest Job No.:**			25-17612	25-17612	25-17612	25-17612	25-17612	25-17612	25-17612
Quotation No.: Q25-37295			**Chemtest Sample ID.:**			1979021	1979022	1979023	1979024	1979025	1979026	1979027
Order No.: 23-02-10			*Client Sample Ref.:*			*6A/6B-SV1*	*6A/6B-SV2*	*6A/6B-SV6*	*6A/6B-SV12*	*6A/6B-SV18*	*6A/6B-SV24*	*6A/6B-SV23*
			Sample Type:			*SOIL*	*SOIL*	*SOIL*	*SOIL*	*SOIL*	*SOIL*	*SOIL*
			Top Depth (m):			*0.20*	*0.20*	*0.20*	*0.20*	*0.20*	*0.20*	*0.20*
			Bottom Depth (m):			*0.20*	*0.20*	*0.20*	*0.20*	*0.20*	*0.20*	*0.20*
			Date Sampled:			*27-May-2025*	*27-May-2025*	*27-May-2025*	*27-May-2025*	*27-May-2025*	*27-May-2025*	*27-May-2025*
			Time Sampled:			*12:45*	*13:00*	*13:15*	*13:30*	*13:45*	*14:00*	*14:15*
			Asbestos Lab:			DURHAM	DURHAM	DURHAM	DURHAM	DURHAM	DURHAM	DURHAM
Determinand	**HWOL Code**	**Accred.**	**SOP**	**Units**	**LOD**							
ACM Type		N	2192		N/A	-	-	-	-	-	-	-
Asbestos Identification		U	2192		N/A	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected
Moisture		N	2030	%	0.020	4.6	6.8	6.1	8.1	6.4	6.1	0.92
Soil Colour		N	2030		N/A	Brown	Brown	Brown	Brown	Brown	Brown	Brown
Other Material		N	2030		N/A	Stones and Roots	Stones and Roots	Stones, Roots and brick	Stones	Stones, Roots and brick	Stones, Roots and brick, concrete	Stones, Roots and brick
Soil Texture		N	2030		N/A	Sand	Sand	Sand	Sand	Sand	Sand	Sand
pH at 20C		M	2010		4.0	8.5	8.8	9.0	9.0	9.3	9.2	9.6
Cyanide (Total)		M	2300	mg/kg	0.50	2.0	3.6	4.4	3.8	7.7	5.2	4.7
Ammoniacal Nitrogen		M	2425	mg/kg	0.50	0.78	0.86	1.4	4.0	1.4	1.9	2.5
Iron (Total)		N	2430	mg/kg	100	25000	37000	25000	36000	23000	32000	42000
Arsenic		M	2455	mg/kg	0.5	5.3	1.0	5.8	0.9	0.7	0.9	0.6
Cadmium		M	2455	mg/kg	0.10	1.3	< 0.10	1.0	0.11	0.17	0.15	0.10
Chromium		M	2455	mg/kg	0.5	46	6.5	37	6.7	5.9	9.4	9.0
Manganese		M	2455	mg/kg	1.0	2200	480	2300	400	320	580	540
Copper		M	2455	mg/kg	0.50	16	2.3	17	3.2	1.8	2.5	1.6
Mercury		M	2455	mg/kg	0.05	0.19	< 0.05	0.27	< 0.05	< 0.05	< 0.05	< 0.05
Nickel		M	2455	mg/kg	0.50	13	1.7	14	2.3	1.4	2.1	1.5
Lead		M	2455	mg/kg	0.50	100	14	120	19	9.4	13	17
Selenium		M	2455	mg/kg	0.25	0.57	< 0.25	0.63	< 0.25	0.85	0.68	0.35
Vanadium		U	2455	mg/kg	0.5	50	8.3	52	9.7	7.4	13	16
Zinc		M	2455	mg/kg	0.50	280	47	340	56	29	44	43
Aliphatic VPH >C5-C6	HS_2D_AL	U	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Aliphatic VPH >C6-C7	HS_2D_AL	U	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Aliphatic VPH >C7-C8	HS_2D_AL	U	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Aliphatic VPH >C6-C8 (Sum)	HS_2D_AL	N	2780	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Aliphatic VPH >C8-C10	HS_2D_AL	U	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Total Aliphatic VPH >C5-C10	HS_2D_AL	U	2780	mg/kg	0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25
Aliphatic EPH >C10-C12 MC	EH_2D_AL_#1	M	2690	mg/kg	2.00	2.1	< 2.0	3.8	< 2.0	2.4	3.1	3.6
Aliphatic EPH >C12-C16 MC	EH_2D_AL_#1	M	2690	mg/kg	1.00	3.9	2.4	19	3.9	3.7	7.8	9.7
Aliphatic EPH >C16-C21 MC	EH_2D_AL_#1	M	2690	mg/kg	2.00	33	25	41	28	28	33	62
Aliphatic EPH >C21-C35 MC	EH_2D_AL_#1	M	2690	mg/kg	3.00	99	97	100	89	83	79	88
Aliphatic EPH >C35-C40 MC	EH_2D_AL_#1	N	2690	mg/kg	10.00	19	18	41	17	22	18	19
Total Aliphatic EPH >C10-C35 MC	EH_2D_AL_#1	M	2690	mg/kg	5.00	140	120	170	120	120	120	160

Results - Soil

Project: P17-480

Client: Rodgers Leask Environmental						**Chemtest Job No.:**	25-17612	25-17612	25-17612	25-17612	25-17612	25-17612	25-17612
Quotation No.: Q25-37295						**Chemtest Sample ID.:**	1979021	1979022	1979023	1979024	1979025	1979026	1979027
Order No.: 23-02-10						*Client Sample Ref.:*	*6A/6B-SV1*	*6A/6B-SV2*	*6A/6B-SV6*	*6A/6B-SV12*	*6A/6B-SV18*	*6A/6B-SV24*	*6A/6B-SV23*
						Sample Type:	*SOIL*	*SOIL*	*SOIL*	*SOIL*	*SOIL*	*SOIL*	*SOIL*
						Top Depth (m):	*0.20*	*0.20*	*0.20*	*0.20*	*0.20*	*0.20*	*0.20*
						Bottom Depth (m):	*0.20*	*0.20*	*0.20*	*0.20*	*0.20*	*0.20*	*0.20*
						Date Sampled:	*27-May-2025*	*27-May-2025*	*27-May-2025*	*27-May-2025*	*27-May-2025*	*27-May-2025*	*27-May-2025*
						Time Sampled:	*12:45*	*13:00*	*13:15*	*13:30*	*13:45*	*14:00*	*14:15*
						Asbestos Lab:	DURHAM	DURHAM	DURHAM	DURHAM	DURHAM	DURHAM	DURHAM
Determinand	**HWOL Code**	**Accred.**	**SOP**	**Units**	**LOD**								
Total Aliphatic EPH >C10-C40 MC	EH_2D_AL_#1	N	2690	mg/kg	10.00		160	140	210	140	140	140	180
Aromatic VPH >C5-C7	HS_2D_AR	U	2780	mg/kg	0.05		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Aromatic VPH >C7-C8	HS_2D_AR	U	2780	mg/kg	0.05		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Aromatic VPH >C8-C10	HS_2D_AR	U	2780	mg/kg	0.05		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Total Aromatic VPH >C5-C10	HS_2D_AR	U	2780	mg/kg	0.25		< 0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25
Aromatic EPH >C10-C12 MC	EH_2D_AR_#1	U	2690	mg/kg	1.00		3.4	3.0	4.0	5.1	10	8.7	14
Aromatic EPH >C12-C16 MC	EH_2D_AR_#1	U	2690	mg/kg	1.00		< 1.0	1.0	11	6.2	5.9	12	15
Aromatic EPH >C16-C21 MC	EH_2D_AR_#1	U	2690	mg/kg	2.00		29	32	57	77	39	130	130
Aromatic EPH >C21-C35 MC	EH_2D_AR_#1	U	2690	mg/kg	2.00		79	76	110	180	92	220	250
Aromatic EPH >C35-C40 MC	EH_2D_AR_#1	N	2690	mg/kg	1.00		7.3	5.9	22	20	15	18	23
Total Aromatic EPH >C10-C35 MC	EH_2D_AR_#1	U	2690	mg/kg	5.00		110	110	180	270	150	370	400
Total Aromatic EPH >C10-C40 MC	EH_2D_AR_#1	N	2690	mg/kg	10.00		120	120	200	290	160	390	430
Total VPH >C5-C10	HS_2D_Total	U	2780	mg/kg	0.50		< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Total EPH >C10-C35 MC	EH_2D_Total_#1	U	2690	mg/kg	10.00		250	240	350	390	270	490	570
Total EPH >C10-C40 MC	EH_2D_Total_#1	N	2690	mg/kg	10.00		280	260	410	430	300	530	610
Organic Matter		M	2625	%	0.40		22	13	19	12	13	28	22
Benzene		M	2760	µg/kg	1.0		< 1.0	< 1.0	< 1.0	4.4	280	10	13
Toluene		M	2760	µg/kg	1.0		< 1.0	4.0	4.4	2.7	8.7	< 1.0	8.4
Ethylbenzene		M	2760	µg/kg	1.0		< 1.0	< 1.0	< 1.0	1.9	< 1.0	< 1.0	< 1.0
m & p-Xylene		M	2760	µg/kg	1.0		< 1.0	< 1.0	4.2	3.3	7.0	5.9	4.6
o-Xylene		M	2760	µg/kg	1.0		< 1.0	11	7.7	9.2	9.5	9.1	7.5
Methyl Tert-Butyl Ether		M	2760	µg/kg	1.0		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Naphthalene		M	2800	mg/kg	0.10		4.6	3.7	6.3	7.4	6.5	11	25
Acenaphthylene		N	2800	mg/kg	0.10		0.99	0.78	1.5	2.3	1.2	1.9	3.1
Acenaphthene		M	2800	mg/kg	0.10		< 0.10	0.21	< 0.10	0.59	0.17	0.29	0.48
Fluorene		M	2800	mg/kg	0.10		0.67	0.83	1.2	2.8	0.81	1.4	2.9
Phenanthrene		M	2800	mg/kg	0.10		4.6	5.8	15	20	6.3	12	25
Anthracene		M	2800	mg/kg	0.10		1.5	2.1	3.2	4.3	1.9	3.3	6.8
Fluoranthene		M	2800	mg/kg	0.10		8.2	9.3	25	28	10	19	52
Pyrene		M	2800	mg/kg	0.10		6.7	7.5	18	19	8.1	14	35
Benzo[a]anthracene		M	2800	mg/kg	0.10		4.8	4.8	9.9	11	5.2	9.1	26
Chrysene		M	2800	mg/kg	0.10		4.9	4.8	11	10	5.4	9.5	25
Benzo[b]fluoranthene		M	2800	mg/kg	0.10		7.0	6.4	14	14	7.5	13	34
Benzo[k]fluoranthene		M	2800	mg/kg	0.10		2.5	2.4	4.3	5.1	2.6	4.3	12
Benzo[a]pyrene		M	2800	mg/kg	0.10		4.6	4.5	9.7	9.7	5.0	8.5	25
Indeno(1,2,3-c,d)Pyrene		M	2800	mg/kg	0.10		3.5	3.6	7.1	7.2	3.8	6.3	17

Results - Soil

Project: P17-480

Client: Rodgers Leask Environmental						25-17612	25-17612	25-17612	25-17612	25-17612	25-17612	25-17612
Quotation No.: Q25-37295		**Chemtest Sample ID.:**				1979021	1979022	1979023	1979024	1979025	1979026	1979027
Order No.: 23-02-10		*Client Sample Ref.:*				*6A/6B-SV1*	*6A/6B-SV2*	*6A/6B-SV6*	*6A/6B-SV12*	*6A/6B-SV18*	*6A/6B-SV24*	*6A/6B-SV23*
		Sample Type:				*SOIL*	*SOIL*	*SOIL*	*SOIL*	*SOIL*	*SOIL*	*SOIL*
		Top Depth (m):				*0.20*	*0.20*	*0.20*	*0.20*	*0.20*	*0.20*	*0.20*
		Bottom Depth (m):				*0.20*	*0.20*	*0.20*	*0.20*	*0.20*	*0.20*	*0.20*
		Date Sampled:				*27-May-2025*	*27-May-2025*	*27-May-2025*	*27-May-2025*	*27-May-2025*	*27-May-2025*	*27-May-2025*
		Time Sampled:				*12:45*	*13:00*	*13:15*	*13:30*	*13:45*	*14:00*	*14:15*
		Asbestos Lab:				DURHAM	DURHAM	DURHAM	DURHAM	DURHAM	DURHAM	DURHAM
Determinand	**HWOL Code**	**Accred.**	**SOP**	**Units**	**LOD**							
Dibenz(a,h)Anthracene		N	2800	mg/kg	0.10	1.0	1.2	1.5	1.8	0.81	1.5	3.8
Benzo[g,h,i]perylene		M	2800	mg/kg	0.10	3.3	3.2	6.8	6.7	3.5	5.9	15
Total Of 16 PAH's		N	2800	mg/kg	2.0	59	61	130	150	69	120	310
Resorcinol		M	2920	mg/kg	0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020
Phenol		M	2920	mg/kg	0.020	< 0.020	< 0.020	0.12	0.070	< 0.020	0.076	0.081
Cresols		M	2920	mg/kg	0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020
Xylenols		M	2920	mg/kg	0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020
1-Naphthol		N	2920	mg/kg	0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020
Trimethylphenols		M	2920	mg/kg	0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020
Total Phenols		M	2920	mg/kg	0.10	< 0.10	< 0.10	0.12	< 0.10	< 0.10	< 0.10	< 0.10

Results - Soil

Project: P17-480

Client: Rodgers Leask Environmental			**Chemtest Job No.:**			25-17612	25-17612	25-17612	25-17612	25-17612
Quotation No.: Q25-37295			**Chemtest Sample ID.:**			1979028	1979029	1979030	1979031	1979032
Order No.: 23-02-10			*Client Sample Ref.:*			*6A/6B-SV17*	*6A/6B-SV11*	*6A/6B-SV5*	*6A/6B-SV4*	*6A/6B-SV10*
			Sample Type:			*SOIL*	*SOIL*	*SOIL*	*SOIL*	*SOIL*
			Top Depth (m):			*0.20*	*0.20*	*0.20*	*0.20*	*0.20*
			Bottom Depth (m):			*0.20*	*0.20*	*0.20*	*0.20*	*0.20*
			Date Sampled:			*27-May-2025*	*27-May-2025*	*27-May-2025*	*27-May-2025*	*27-May-2025*
			Time Sampled:			*14:30*	*14:45*	*15:00*	*15:15*	*15:30*
			Asbestos Lab:			DURHAM	DURHAM	DURHAM	DURHAM	DURHAM
Determinand	**HWOL Code**	**Accred.**	**SOP**	**Units**	**LOD**					
ACM Type		N	2192		N/A	-	-	-	-	-
Asbestos Identification		U	2192		N/A	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected
Moisture		N	2030	%	0.020	5.7	7.1	15	5.3	6.6
Soil Colour		N	2030		N/A	Brown	Brown	Brown	Brown	Brown
Other Material		N	2030		N/A	Stones, Roots and brick	Stones, Roots and brick	Stones and brick, concrete	Stones and brick	Stones, Roots and Glass
Soil Texture		N	2030		N/A	Sand	Sand	Sand	Sand	Sand
pH at 20C		M	2010		4.0	9.5	9.2	9.3	9.3	9.3
Cyanide (Total)		M	2300	mg/kg	0.50	3.9	4.0	5.2	4.4	4.0
Ammoniacal Nitrogen		M	2425	mg/kg	0.50	1.2	1.5	1.4	1.0	1.5
Iron (Total)		N	2430	mg/kg	100	26000	26000	34000	51000	30000
Arsenic		M	2455	mg/kg	0.5	0.9	4.9	0.7	1.2	1.0
Cadmium		M	2455	mg/kg	0.10	0.21	1.1	0.10	0.24	0.15
Chromium		M	2455	mg/kg	0.5	3.7	38	6.0	12	4.4
Manganese		M	2455	mg/kg	1.0	270	2300	410	690	280
Copper		M	2455	mg/kg	0.50	1.7	14	2.2	3.5	1.9
Mercury		M	2455	mg/kg	0.05	< 0.05	0.15	< 0.05	0.05	< 0.05
Nickel		M	2455	mg/kg	0.50	3.2	12	1.7	5.4	1.7
Lead		M	2455	mg/kg	0.50	16	100	15	34	14
Selenium		M	2455	mg/kg	0.25	0.25	0.62	< 0.25	0.30	< 0.25
Vanadium		U	2455	mg/kg	0.5	6.6	58	8.9	16	6.5
Zinc		M	2455	mg/kg	0.50	36	290	47	100	46
Aliphatic VPH >C5-C6	HS_2D_AL	U	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Aliphatic VPH >C6-C7	HS_2D_AL	U	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Aliphatic VPH >C7-C8	HS_2D_AL	U	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Aliphatic VPH >C6-C8 (Sum)	HS_2D_AL	N	2780	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Aliphatic VPH >C8-C10	HS_2D_AL	U	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Total Aliphatic VPH >C5-C10	HS_2D_AL	U	2780	mg/kg	0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25
Aliphatic EPH >C10-C12 MC	EH_2D_AL_#1	M	2690	mg/kg	2.00	3.3	< 2.0	11	4.9	4.2
Aliphatic EPH >C12-C16 MC	EH_2D_AL_#1	M	2690	mg/kg	1.00	7.1	4.6	11	12	9.6
Aliphatic EPH >C16-C21 MC	EH_2D_AL_#1	M	2690	mg/kg	2.00	24	34	31	33	37
Aliphatic EPH >C21-C35 MC	EH_2D_AL_#1	M	2690	mg/kg	3.00	72	80	89	87	100
Aliphatic EPH >C35-C40 MC	EH_2D_AL_#1	N	2690	mg/kg	10.00	17	17	18	15	19
Total Aliphatic EPH >C10-C35 MC	EH_2D_AL_#1	M	2690	mg/kg	5.00	110	120	140	140	150

Results - Soil

Project: P17-480

Client: Rodgers Leask Environmental				**Chemtest Job No.:**		25-17612	25-17612	25-17612	25-17612	25-17612
Quotation No.: Q25-37295				**Chemtest Sample ID.:**		1979028	1979029	1979030	1979031	1979032
Order No.: 23-02-10				*Client Sample Ref.:*		*6A/6B-SV17*	*6A/6B-SV11*	*6A/6B-SV5*	*6A/6B-SV4*	*6A/6B-SV10*
				Sample Type:		*SOIL*	*SOIL*	*SOIL*	*SOIL*	*SOIL*
				Top Depth (m):		*0.20*	*0.20*	*0.20*	*0.20*	*0.20*
				Bottom Depth (m):		*0.20*	*0.20*	*0.20*	*0.20*	*0.20*
				Date Sampled:		*27-May-2025*	*27-May-2025*	*27-May-2025*	*27-May-2025*	*27-May-2025*
				Time Sampled:		*14:30*	*14:45*	*15:00*	*15:15*	*15:30*
				Asbestos Lab:		DURHAM	DURHAM	DURHAM	DURHAM	DURHAM
Determinand	**HWOL Code**	**Accred.**	**SOP**	**Units**	**LOD**					
Total Aliphatic EPH >C10-C40 MC	EH_2D_AL_#1	N	2690	mg/kg	10.00	120	140	160	150	170
Aromatic VPH >C5-C7	HS_2D_AR	U	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Aromatic VPH >C7-C8	HS_2D_AR	U	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Aromatic VPH >C8-C10	HS_2D_AR	U	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Total Aromatic VPH >C5-C10	HS_2D_AR	U	2780	mg/kg	0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25
Aromatic EPH >C10-C12 MC	EH_2D_AR_#1	U	2690	mg/kg	1.00	4.1	2.9	7.0	4.4	5.0
Aromatic EPH >C12-C16 MC	EH_2D_AR_#1	U	2690	mg/kg	1.00	3.1	2.7	5.5	3.3	5.4
Aromatic EPH >C16-C21 MC	EH_2D_AR_#1	U	2690	mg/kg	2.00	49	49	71	54	80
Aromatic EPH >C21-C35 MC	EH_2D_AR_#1	U	2690	mg/kg	2.00	130	140	180	120	210
Aromatic EPH >C35-C40 MC	EH_2D_AR_#1	N	2690	mg/kg	1.00	16	16	27	19	21
Total Aromatic EPH >C10-C35 MC	EH_2D_AR_#1	U	2690	mg/kg	5.00	180	190	270	180	300
Total Aromatic EPH >C10-C40 MC	EH_2D_AR_#1	N	2690	mg/kg	10.00	200	210	290	200	320
Total VPH >C5-C10	HS_2D_Total	U	2780	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Total EPH >C10-C35 MC	EH_2D_Total_#1	U	2690	mg/kg	10.00	290	310	410	320	460
Total EPH >C10-C40 MC	EH_2D_Total_#1	N	2690	mg/kg	10.00	320	340	450	350	500
Organic Matter		M	2625	%	0.40	11	15	12	11	13
Benzene		M	2760	µg/kg	1.0	2.9	< 1.0	6.6	< 1.0	< 1.0
Toluene		M	2760	µg/kg	1.0	2.9	4.3	6.0	4.2	< 1.0
Ethylbenzene		M	2760	µg/kg	1.0	1.3	2.0	< 1.0	< 1.0	< 1.0
m & p-Xylene		M	2760	µg/kg	1.0	< 1.0	3.4	5.3	3.4	< 1.0
o-Xylene		M	2760	µg/kg	1.0	9.0	9.5	10	6.6	< 1.0
Methyl Tert-Butyl Ether		M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Naphthalene		M	2800	mg/kg	0.10	5.6	5.3	4.8	5.5	5.8
Acenaphthylene		N	2800	mg/kg	0.10	1.3	1.5	1.1	1.1	1.8
Acenaphthene		M	2800	mg/kg	0.10	0.20	0.21	0.20	0.23	0.20
Fluorene		M	2800	mg/kg	0.10	0.76	1.3	0.80	0.89	0.97
Phenanthrene		M	2800	mg/kg	0.10	5.8	9.7	5.8	6.6	7.3
Anthracene		M	2800	mg/kg	0.10	1.8	3.5	1.9	2.2	2.7
Fluoranthene		M	2800	mg/kg	0.10	10	17	11	12	14
Pyrene		M	2800	mg/kg	0.10	8.3	12	8.0	9.3	13
Benzo[a]anthracene		M	2800	mg/kg	0.10	5.4	7.5	5.1	6.2	7.9
Chrysene		M	2800	mg/kg	0.10	5.8	7.6	5.4	6.6	8.6
Benzo[b]fluoranthene		M	2800	mg/kg	0.10	8.1	11	7.6	8.9	12
Benzo[k]fluoranthene		M	2800	mg/kg	0.10	2.8	3.5	2.5	3.5	3.9
Benzo[a]pyrene		M	2800	mg/kg	0.10	5.6	6.9	5.1	6.3	7.7
Indeno(1,2,3-c,d)Pyrene		M	2800	mg/kg	0.10	4.3	5.2	3.8	5.0	5.9

Results - Soil

Project: P17-480

Client: Rodgers Leask Environmental				**Chemtest Job No.:**		25-17612	25-17612	25-17612	25-17612	25-17612
Quotation No.: Q25-37295				**Chemtest Sample ID.:**		1979028	1979029	1979030	1979031	1979032
Order No.: 23-02-10				*Client Sample Ref.:*		*6A/6B-SV17*	*6A/6B-SV11*	*6A/6B-SV5*	*6A/6B-SV4*	*6A/6B-SV10*
				Sample Type:		*SOIL*	*SOIL*	*SOIL*	*SOIL*	*SOIL*
				Top Depth (m):		*0.20*	*0.20*	*0.20*	*0.20*	*0.20*
				Bottom Depth (m):		*0.20*	*0.20*	*0.20*	*0.20*	*0.20*
				Date Sampled:		*27-May-2025*	*27-May-2025*	*27-May-2025*	*27-May-2025*	*27-May-2025*
				Time Sampled:		*14:30*	*14:45*	*15:00*	*15:15*	*15:30*
				Asbestos Lab:		DURHAM	DURHAM	DURHAM	DURHAM	DURHAM
Determinand	**HWOL Code**	**Accred.**	**SOP**	**Units**	**LOD**					
Dibenz(a,h)Anthracene		N	2800	mg/kg	0.10	1.0	1.3	0.89	1.7	1.2
Benzo[g,h,i]perylene		M	2800	mg/kg	0.10	4.0	4.8	3.6	4.5	5.3
Total Of 16 PAH's		N	2800	mg/kg	2.0	71	98	68	81	98
Resorcinol		M	2920	mg/kg	0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020
Phenol		M	2920	mg/kg	0.020	< 0.020	0.069	< 0.020	< 0.020	0.061
Cresols		M	2920	mg/kg	0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020
Xylenols		M	2920	mg/kg	0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020
1-Naphthol		N	2920	mg/kg	0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020
Trimethylphenols		M	2920	mg/kg	0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020
Total Phenols		M	2920	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10

Test Methods

SOP	Title	Parameters included	Method summary	Water Accred.
2010	pH Value of Soils	pH at 20°C	pH Meter	
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <30°C.	
2192	Asbestos	Asbestos	Polarised light microscopy / Gravimetry	
2300	Cyanides & Thiocyanate in Soils	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Allkaline extraction followed by colorimetric determination using Automated Flow Injection Analyser.	
2425	Extractable Ammonium in soils	Ammonium	Extraction with potassium chloride solution / analysis by 'Aquakem 600' Discrete Analyser using sodium salicylate and sodium dichloroisocyanurate.	
2430	Total Sulphate in soils	Total Sulphate	Acid digestion followed by determination of sulphate in extract by ICP-OES.	
2455	Acid Soluble Metals in Soils	Metals, including: Arsenic; Barium; Beryllium; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Vanadium; Zinc	Acid digestion followed by determination of metals in extract by ICP-MS.	
2625	Total Organic Carbon in Soils	Total organic Carbon (TOC)	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.	
2690	EPH A/A Split	Aliphatics: >C10–C12, >C12–C16, >C16–C21, >C21– C35, >C35– C40 Aromatics: >C10–C12, >C12–C16, >C16–C21, >C21– C35, >C35– C40	Acetone/Heptane extraction / GCxGC FID detection	
2760	Volatile Organic Compounds (VOCs) in Soils by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics.(cf. USEPA Method 8260)*please refer to UKAS schedule	Automated headspace gas chromatographic (GC) analysis of a soil sample, as received, with mass spectrometric (MS) detection of volatile organic compounds.	
2780	VPH A/A Split	Aliphatics: >C5–C6, >C6–C7,>C7–C8,>C8-C10 Aromatics: >C5–C7,>C7-C8,>C8–C10	Water extraction / Headspace GCxGC FID detection	
2800	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Soil by GC-MS	Acenaphthene*; Acenaphthylene; Anthracene*; Benzo[a]Anthracene*; Benzo[a]Pyrene*; Benzo[b]Fluoranthene*; Benzo[ghi]Perylene*; Benzo[k]Fluoranthene; Chrysene*; Dibenz[ah]Anthracene; Fluoranthene*; Fluorene*; Indeno[123cd]Pyrene*; Naphthalene*; Phenanthrene*; Pyrene*	Dichloromethane extraction / GC-MS	
2920	Phenols in Soils by HPLC	Phenolic compounds including Resorcinol, Phenol, Methylphenols, Dimethylphenols, 1-Naphthol and TrimethylphenolsNote: chlorophenols are excluded.	60:40 methanol/water mixture extraction, followed by HPLC determination using electrochemical detection.	

Report Information

Key	
U	UKAS accredited
M	MCERTS and UKAS accredited
N	Unaccredited
S	This analysis has been subcontracted to a UKAS accredited laboratory that is accredited for this analysis
SN	This analysis has been subcontracted to a UKAS accredited laboratory that is not accredited for this analysis
T	This analysis has been subcontracted to an unaccredited laboratory
I/S	Insufficient Sample
U/S	Unsuitable Sample
N/E	not evaluated
<	"less than"
>	"greater than"
SOP	Standard operating procedure
LOD	Limit of detection
Text example	All items indicated in italic font represent customer-supplied information that may not be independently verified by the laboratory

This report shall not be reproduced except in full, and only with the prior approval of the laboratory.

Any comments or interpretations are outside the scope of UKAS accreditation.

The Laboratory is not accredited for any sampling activities and reported results relate to the samples 'as received' at the laboratory.

Uncertainty of measurement for the determinands tested are available upon request .

None of the results in this report have been recovery corrected.

All results are expressed on a dry weight basis.

The following tests were analysed on samples 'as received' and the results subsequently corrected to a dry weight basis EPH, VPH, TPH, BTEX, VOCs, SVOCs, PCBs, Phenols.

For all other tests the samples were dried at ≤ 30°C prior to analysis.

All Asbestos testing is performed at the indicated laboratory .

Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1.

NEW_ASB	Eurofins Chemtest Limited, 11 Depot Road, Newmarket, CB8 0AL
DURHAM	Eurofins Chemtest Limited, Unit A North Wing, Prospect Business Park, Crookhall Lane, Consett, Co Durham, DH8 7PW

Sample Deviation Codes

As a result of any of the below deviations applying, the test results may be unreliable

A - Date of sampling not supplied

B - Sample age exceeds stability time (sampling to extraction)

C - Sample not received in appropriate containers

D - Broken Container

E - The required amount of sample for analysis was not received

H - Appropriate cooling measures were not taken for sample transportation

Sample Retention and Disposal

All soil samples will be retained for a period of 30 days from the date of receipt.

All water samples will be retained for 14 days from the date of receipt.

Charges may apply to extended sample storage.

Report Information

Water Sample Category Key for Accreditation

DW - Drinking Water
GW - Ground Water
LE - Land Leachate
NA - Not Applicable
PL - Prepared Leachate
PW - Processed Water
RE - Recreational Water
SA - Saline Water
SW - Surface Water
TE - Treated Effluent
TS - Treated Sewage
UL - Unspecified Liquid

Clean Up Codes

NC - No Clean Up
MC - Mathematical Clean Up
FC - Florisil Clean Up

HWOL Acronym System

HS - Headspace analysis
EH - Extractable hydrocarbons – i.e. everything extracted by the solvent
CU - Clean-up – e.g. by Florisil, silica gel
1D - GC – Single coil gas chromatography
Total - Aliphatics & Aromatics
AL - Aliphatics only
AR - Aromatic only
2D - GC-GC – Double coil gas chromatography
#1 - EH_2D_Total but with humics mathematically subtracted
#2 - EH_2D_Total but with fatty acids mathematically subtracted
+ - Operator to indicate cumulative e.g. EH+EH_Total or EH_CU+HS_Total

Asbestos Tests LOD = LOQ

Limit of Detection = Limit of Quantification for asbestos results only

If you require extended retention of samples, please email your requirements to:
customerservices@chemtest.com

Appendix E: Gas Monitoring

6A-WS2

Date	Oxygen Concentration (%)		Carbon dioxide concentration (%)		Methane concentration (%)		Flow Rate		Gas Screening Value	Pressure (mb)	Pressure Trend	Base Level (m)	Water Level (m)	H2S (ppm)	CO (ppm)
	Minimum	Steady	Peak	Steady	Peak	Steady	Peak	Steady						Peak	Peak
21/05/25	9.9	4.4	0.0	0.0	1.9	2.7	0.0	0.0	0.000	1016	Falling	1.95	Dry	0	0
28/05/25	20.1	20.2	0.1	0.0	0.0	0.0	0.0	0.0	0.000	1016	Steady	1.95	1.95	0	0
03/06/25	0.5	0.5	0.1	0.0	2.1	2.1	0.0	0.0	0.000	1001	Steady	1.95	Dry	0	0
19/06/25	0.0	0.0	0.6	0.6	0.0	0.0	0.0	0.0	0.000	1023	Falling	1.96	Dry	0	0
25/06/25	0.0	0.0	0.0	0.0	0.9	0.9	0.0	0.0	0.000	1010	Steady	1.96	1.96	0	0
17/07/25	16.0	16.0	0.0	0.0	0.0	0.0	0.0	0.0	0.000	1013	Falling	1.96	Dry	0.00	0

ining the Gas Screening Value

Maximum Carbon dioxide concentration**	Maximum methane**	Maximum flow rate*
0.6	2.1	0.3

*0.3 l/hr Flow has been used on any value less than 0.3 l/hr based on gas analyser potential error.

Gas Screening Value (l/hr) = Max. borehole flow rate (l/hr) x Max. gas concentration (%)

Gas Screening Value =	0.0063

6B-WS1

Date	Oxygen Concentration (%)		Carbon dioxide concentration (%)		Methane concentration (%)		Flow Rate		Gas Screening Value	Pressure	Pressure Trend	Base Level (m)	Water Level (m)	H2S (ppm)	CO (ppm)
	Minimum	Steady	Peak	Steady	Peak	Steady	Peak	Steady						Peak	Peak
21/05/25	10.5	12.7	0.1	0.1	1.7	0.6	0.0	0.0	0.000	1015	Falling	1.95	Dry	0	0
28/05/25	20.2	20.2	0.0	0.0	0.0	0.0	0.0	0.0	0.000	1016	Steady	1.95	Dry	0	0
03/06/25	5.2	5.2	0.0	0.0	0.0	0.0	0.0	0.0	0.000	1001	Steady	1.95	1.87	0	0
19/06/25	5.9	7.6	0.4	0.4	5.3	5.3	0.0	0.0	0.000	1022	Falling	1.97	1.82	0	0
25/06/25	16.3	16.4	0.0	0.0	0.0	0.0	0.0	0.0	0.000	1009	Steady	1.96	1.88	0	0
17/07/25	19.0	19.0	0.0	0.0	0.0	0.0	0.0	0.0	0.000	1014	Falling	1.97	1.88	0.00	0

ining the Gas Screening Value

Maximum Carbon dioxide concentration	Maximum methane	Maximum flow rate*
0.4	5.3	0.3

*0.3 l/hr Flow has been used on any value less than 0.3 l/hr based on gas analyser potential error.

Gas Screening Value (l/hr) = Max. borehole flow rate (l/hr) x Max. gas concentration (%)

Gas Screening Value =	0.0159

BP WS03

Date	Oxygen Concentration (%)		Carbon dioxide concentration (%)		Methane concentration (%)		Flow Rate		Gas Screening Value	Pressure	Pressure Trend	Base Level (m)	Water Level (m)	H2S (ppm)	CO (ppm)
	Minimum	Steady	Peak	Steady	Peak	Steady	Peak	Steady						Peak	Peak
25/02/22	21.4	20.5	0.1	0.1	0.2	0.2	-0.2	-0.4	0.000	1030	Steady	2.37	2.36	0	2
29/03/22	19.6	12.6	0.1	0.1	0.2	0.0	0.1	0.1	0.000	1011	Rising	2.37	Dry	0	1
04/04/22	16.1	10.5	0.1	0.1	0.5	0.2	0.0	0.0	0.000	1013	Rising	2.38	Dry	0	1
05/04/22	11.4	8.9	0.1	0.0	0.5	0.5	0.2	0.2	0.001	1010	Steady	2.38	Dry	0	1
07/04/22	7.0	6.9	0.1	0.0	0.6	0.6	0.0	0.0	0.000	994	Rising	2.38	Dry	0	2
25/05/22	1.6	1.6	0.0	0.0	0.0	0.0	0.0	0.0	0.000	1014	Rising	2.37	Dry	0.00	2
21/05/25	18.2	18.7	0.0	0.0	0.0	0.0	0.0	0.0	0.000	1013	Falling	2.35	Dry	0	0
28/05/25	11.4	11.7	0.1	0.1	0.0	0.0	0.0	0.0	0.000	1015	Steady	2.35	Dry	0	0
03/06/25	0.0	8.1	0.1	0.1	3.5	2.1	0.0	0.0	0.000	1001	Steady	2.35	Dry	0	0
19/06/25	10.3	10.3	0.1	0.1	0.0	0.0	0.0	0.0	0.000	1020	Falling	2.35	Dry	0	0
25/06/25	1.9	1.9	0.3	0.3	0.0	0.0	0.0	0.0	0.000	1009	Steady	2.35	Dry	0	0
17/07/25	9.9	9.9	0.2	0.2	0.0	0.0	0.0	0.0	0.0	1013	Falling	2.35	Dry	0.00	0

ining the Gas Screening Value

Maximum Carbon dioxide concentration	Maximum methane	Maximum flow rate*
0.3	3.5	0.3

*0.3 l/hr Flow has been used on any value less than 0.3 l/hr based on gas analyser potential error.

*** Data extracted from continuous ground gas monitoring, no flow and water level data recorded

Gas Screening Value (l/hr) = Max. borehole flow rate (l/hr) x Max. gas concentration (%)

Gas Screening Value =	0.0105

6B-WS4

Date	Oxygen Concentration (%)		Carbon dioxide concentration (%)		Methane concentration (%)		Flow Rate		Gas Screening Value	Pressure	Pressure Trend	Base Level (m)	Water Level (m)	H2S (ppm)	CO (ppm)
	Minimum	Steady	Peak	Steady	Peak	Steady	Peak	Steady						Peak	Peak
21/05/25	17.1	17.2	0.1	0.0	0.0	0.0	0.0	0.0	0.000	1014	Falling	2.91	Dry	0	10
28/05/25	18.3	18.3	0.0	0.0	0.0	0.0	0.0	0.0	0.000	1015	Steady	2.91	Dry	0	0
03/06/25	18.1	18.2	0.0	0.0	0.0	0.0	0.0	0.0	0.000	999	Steady	2.91	2.86	0	0
19/06/25	12.1	12.3	0.0	0.0	0.0	0.0	0.0	0.0	0.000	1019	Falling	2.92	2.87	0	0
25/06/25	16.0	16.0	0.0	0.0	0.0	0.0	0.0	0.0	0.000	1010	Steady	2.92	2.80	0	0
17/07/25	13.0	13.0	0.0	0.0	0.0	0.0	0.0	0.0	0.000	1014	Falling	2.91	Dry	0.00	0

ining the Gas Screening Value

Maximum Carbon dioxide concentration	Maximum methane	Maximum flow rate*
0.1	0.1	0.3

*0.3 l/hr Flow has been used on any value less than 0.3 l/hr based on gas analyser potential error.

*** Data extracted from continuous ground gas monitoring, no flow and water level data recorded

Gas Screening Value (l/hr) = Max. borehole flow rate (l/hr) x Max. gas concentration (%)

Gas Screening Value =	0.0003

BP WS07

Date	Oxygen Concentration (%)		Carbon dioxide concentration (%)		Methane concentration (%)		Flow Rate		Gas Screening Value	Pressure	Pressure Trend	Base Level (m)	Water Level (m)	H2S (ppm)	CO (ppm)
	Minimum	Steady	Peak	Steady	Peak	Steady	Peak	Steady						Peak	Peak
25/02/22	20.8	20.8	0.1	0.1	0.2	0.2	-0.1	-0.1	0.000	1029	Rising	2.32	1.63	0	0
29/03/22	18.7	13.0	0.1	0.1	0.0	0.0	0.0	0.0	0.000	1011	Rising	2.32	1.73	0	1
04/04/22	18.8	14.3	0.1	0.1	0.0	0.0	0.0	0.0	0.000	1010	Rising	2.32	1.76	0	1
05/04/22	18.9	12.4	0.0	0.1	0.0	0.0	0.0	0.0	0.000	1011	Rising			0	1
07/04/22	19.1	17.7	0.1	0.1	0.0	0.0	0.0	0.0	0.000	995	Rising	2.32	1.76	0	1
25/05/22	20.6	20.4	0.1	0.1	0.0	0.0	0.1	0.1	0.000	1014	Rising	2.30	1.98	0	1
21/05/25	No Gas Bung								0.000	1013		2.31m	1.77m		
28/05/25	No Gas Bung								0.000	1015		2.31m	1.80		
03/06/25	No Gas Bung								0.000	1000		2.31	1.84		
19/05/25	No Gas Bung								0.000	1022		2.32	1.83		
25/06/25	No Gas Bung								0.000	1009		2.32	1.80		
17/07/25	No Gas Bung								0.000	1013	Falling	2.32	1.91		

ining the Gas Screening Value

Maximum Carbon dioxide concentration	Maximum methane	Maximum flow rate*
0.1	0.2	0.3

*0.3 l/hr Flow has been used on any value less than 0.3 l/hr based on gas analyser potential error.

*** Data extracted from continuous ground gas monitoring, no flow and water level data recorded

Gas Screening Value (l/hr) = Max. borehole flow rate (l/hr) x Max. gas concentration (%)

Gas Screening Value =	0.0006

BP WS08

Date	Oxygen Concentration (%)		Carbon dioxide concentration (%)		Methane concentration (%)		Flow Rate		Gas Screening Value	Pressure	Pressure Trend	Base Level (m)	Water Level (m)	H2S (ppm)	CO (ppm)
	Minimum	Steady	Peak	Steady	Peak	Steady	Peak	Steady						Peak	Peak
25/02/22	20.8	20.8	0.1	0.1	0.2	0.2	0.4	0.4	0.001	1028	Rising	2.09	Dry	0	0
29/03/22	0.2	0.2	0.1	0.1	0.3	0.3	0	0	0.000	1010	Rising	2.10	Dry	0	1
04/04/22	2.5	2.3	0.1	0.1	0	0	0	0	0.000	1012	Rising	2.10	Dry	0	1
05/04/22	0.8	0.8	0.1	0	0	0	0.1	0.1	0.000	1011	Rising	2.10	Dry	0	1
07/04/22	20.9	20.9	0.1	0.1	0	0	0	0	0.000	995	Rising	2.10	Dry	0	1
25/05/22	17	16.9	0.1	0.1	0	0	0.1	0.1	0.000	1013	Rising	2.09	Dry		
21/05/25	0	0	0.2	0.2	0	0	0	0	0.000	1014	Falling	2.11	Dry	0	0
28/05/25	20.6	20.7	0	0	0	0	0	0	0.000	1016	Steady	2.11	Dry	0	0
03/06/25	4.9	12.2	0.2	0.2	0	0	0	0	0.000	1001	Steady	2.11	Dry	0	0
19/06/25	0.1	0.1	0.2	0.2	0	0	0	0	0.000	1022	Falling	2.13	Dry	0	0
25/06/25	1.6	1.6	0.2	0.2	0	0	0	0	0.000	1010	Steady	2.10	Dry	0	0
17/07/25	2.4	2.4	0.2	0.2	0.0	0.0	0.0	0.0	0.0	1013	Falling	2.10	Dry	0.00	0

ining the Gas Screening Value

Maximum Carbon dioxide concentration	Maximum methane	Maximum flow rate*
0.2	0.3	0.4

*0.3 l/hr Flow has been used on any value less than 0.3 l/hr based on gas analyser potential error.

*** Data extracted from continuous ground gas monitoring, no flow and water level data recorded

Gas Screening Value (l/hr) = Max. borehole flow rate (l/hr) x Max. gas concentration (%)

Gas Screening Value =	0.0012

6A-WS5

Date	Oxygen Concentration (%)		Carbon dioxide concentration (%)		Methane concentration (%)		Flow Rate		Gas Screening Value	Pressure	Pressure Trend	Base Level (m)	Water Level (m)	H2S (ppm)	CO (ppm)
	Minimum	Steady	Peak	Steady	Peak	Steady	Peak	Steady						Peak	Peak
21/5/25	8.1	8.2	0	0	0	0	0	0	0.000	1013	Falling	2.95m	Dry	0	10
28/5/25	13.3	13.4	0	0	0	0	0	0	0.000	1014	Steady	2.95m	Dry	0	0
3/6/25	0.2	0.2	0	0	0.9	0.9	0	0	0.000	1000	Steady	2.95m	Dry	0	0
19/6/25	1	1	0	0	0	0	0	0	0.000	1022	Falling	2.93	Dry	0	0
25/6/25	2.7	2.7	0	0	0	0	0	0	0.000	1009	Steady	2.93	Dry	0	0
17/07/25	14.0	14.0	0.0	0.0	0.0	0.0	0.0	0.0	0.000	1013	Falling	2.93	Dry	0.00	0

ining the Gas Screening Value

Maximum Carbon dioxide concentration	Maximum methane	Maximum flow rate*
0.1	0.9	0.3

*0.3 l/hr Flow has been used on any value less than 0.3 l/hr based on gas analyser potential error.

*** Data extracted from continuous ground gas monitoring, no flow and water level data recorded

Gas Screening Value (l/hr) = Max. borehole flow rate (l/hr) x Max. gas concentration (%)

Gas Screening Value =	0.0027

6A-WS4

Date	Oxygen Concentration (%)		Carbon dioxide concentration (%)		Methane concentration (%)		Flow Rate		Gas Screening Value	Pressure	Pressure Trend	Base Level (m)	Water Level (m)	H2S (ppm)	CO (ppm)
	Minimum	Steady	Peak	Steady	Peak	Steady	Peak	Steady						Peak	Peak
21/5/25	18.7	18.8	0	0	0	0	0	0	0.000	1012	Falling	2.91	2.41	0	0
28/5/25	13.2	18.9	0.1	0	0	0	0	0	0.000	1015	Steady	2.91	2.32	0	0
3/6/25	Unsuitable for monitoring - nearby earthworks														
19/6/25	18.5	19.2	0	0	0	0	0	0	0.000	1019	Falling	2.92	1.02	0	0
25/6/25	19.8	19.8	0	0	0	0	0	0	0.000	1009	Steady	2.91	1.18	0	0
17/07/25	18.5	18.5	0.0	0.0	0.0	0.0	0.0	0.0	0.000	1013	Falling	2.91	2.51	0.00	0

ining the Gas Screening Value

Maximum Carbon dioxide concentration	Maximum methane	Maximum flow rate*
0.1	0.1	0.3

*0.3 l/hr Flow has been used on any value less than 0.3 l/hr based on gas analyser potential error.

*** Data extracted from continuous ground gas monitoring, no flow and water level data recorded

Gas Screening Value (l/hr) = Max. borehole flow rate (l/hr) x Max. gas concentration (%)

Gas Screening Value =	0.0003

6A-WS3

Date	Oxygen Concentration (%)		Carbon dioxide concentration (%)		Methane concentration (%)		Flow Rate		Gas Screening Value	Pressure	Pressure Trend	Base Level (m)	Water Level (m)	H2S (ppm)	CO (ppm)
	Minimum	Steady	Peak	Steady	Peak	Steady	Peak	Steady						Peak	Peak
21/5/25	18.2	18.7	0	0	0	0	0	0	0.000	1012	Falling	2.92	2.66	0	10
28/5/25	18.9	19	0	0	0	0	0	0	0.000	1015	Steady	2.92	2.43	0	0
3/6/25	Unsuitable for monitoring - nearby earthworks														
19/6/25	18.3	20.6	0	0	0	0	0	0	0.000	1017	Falling	2.93	1.69	0	0
25/6/25	20.1	20.1	0	0	0	0	0	0	0.000	1009	Steady	2.92	1.77	0	0
17/07/25	19.1	19.1	0.0	0.0	0.0	0.0	0.0	0.0	0.000	1014	Falling	2.92	2.07	0.00	0

ining the Gas Screening Value

Maximum Carbon dioxide concentration	Maximum methane	Maximum flow rate*
0.1	0.1	0.3

*0.3 l/hr Flow has been used on any value less than 0.3 l/hr based on gas analyser potential error.

*** Data extracted from continuous ground gas monitoring, no flow and water level data recorded

Gas Screening Value (l/hr) = Max. borehole flow rate (l/hr) x Max. gas concentration (%)

Gas Screening Value =	0.0003

BP WS01

Date	Oxygen Concentration (%)		Carbon dioxide concentration (%)		Methane concentration (%)		Flow Rate		Gas Screening Value	Pressure	Pressure Trend	Base Level (m)	Water Level (m)	H2S (ppm)	CO (ppm)
	Minimum	Steady	Peak	Steady	Peak	Steady	Peak	Steady						Peak	Peak
25/2/22	21.4	21.5	0.1	0.1	0.2	0.1	-0.3	-0.2	-0.001	1030	Steady	2.14	2.05	0	0
29/3/22	17.3	9.5	0	0	0	0	0.1	0.1	0.000	1011	Rising	2.13	Dry	0	1
4/4/22	16.8	12.1	0.1	0.1	0	0	0.1	0.1	0.000	1013	Rising	-	-	0	1
5/4/22	15.5	9.8	0.1	0	0.1	0	0	0	0.000	1011	Steady	-	-	0	1
7/4/22	21.5	20.9	0.1	0.1	0	0	0	0	0.000	995	Rising	2.14	2.13	0	2
25/05/22	20.4	20.3	0.1	0.1	0.0	0.0	0.1	0.1	0.000	1014	Rising	2.13	-	0	1

ining the Gas Screening Value

Maximum Carbon dioxide concentration	Maximum methane	Maximum flow rate*
0.1	0.2	0.3

*0.3 l/hr Flow has been used on any value less than 0.3 l/hr based on gas analyser potential error.

*** Data extracted from continuous ground gas monitoring, no flow and water level data recorded

Gas Screening Value (l/hr) = Max. borehole flow rate (l/hr) x Max. gas concentration (%)

Gas Screening Value =	0.0006

BP WS02

Date	Oxygen Concentration (%)		Carbon dioxide concentration (%)		Methane concentration (%)		Flow Rate		Gas Screening Value	Pressure	Pressure Trend	Base Level (m)	Water Level (m)	H2S (ppm)	CO (ppm)
	Minimum	Steady	Peak	Steady	Peak	Steady	Peak	Steady						Peak	Peak
25/2/22	20	0.3	0.1	0	0.1	0.3	-0.4	-0.3	0.000	1030	Steady	2.36	Dry	0	6
29/3/22	0.6	0.5	0.1	0	0.1	0.1	0.1	0.1	0.000	1011	Rising	2.36	Dry	0	20
4/4/22	9.6	9.6	0.1	0.1	0	0	-0.1	-0.1	0.000	1013	Rising	2.35	Dry	0	28
5/4/22	10.6	10.6	0.1	0	0.1	0	0	0	0.000	1010	Steady	2.36	Dry	0	15
7/4/22	20.1	19	0	0	0.1	0	0	0	0.000	995	Rising	2.35	Dry	0	5
25/05/22	20.6	20.1	0.1	0.1	0.0	0.0	0.2	0.2	0.000	1014	Rising			0	0

ining the Gas Screening Value

Maximum Carbon dioxide concentration	Maximum methane	Maximum flow rate*
0.1	0.1	0.3

*0.3 l/hr Flow has been used on any value less than 0.3 l/hr based on gas analyser potential error.

*** Data extracted from continuous ground gas monitoring, no flow and water level data recorded

Gas Screening Value (l/hr) = Max. borehole flow rate (l/hr) x Max. gas concentration (%)

Gas Screening Value =	0.0003

GeoReports

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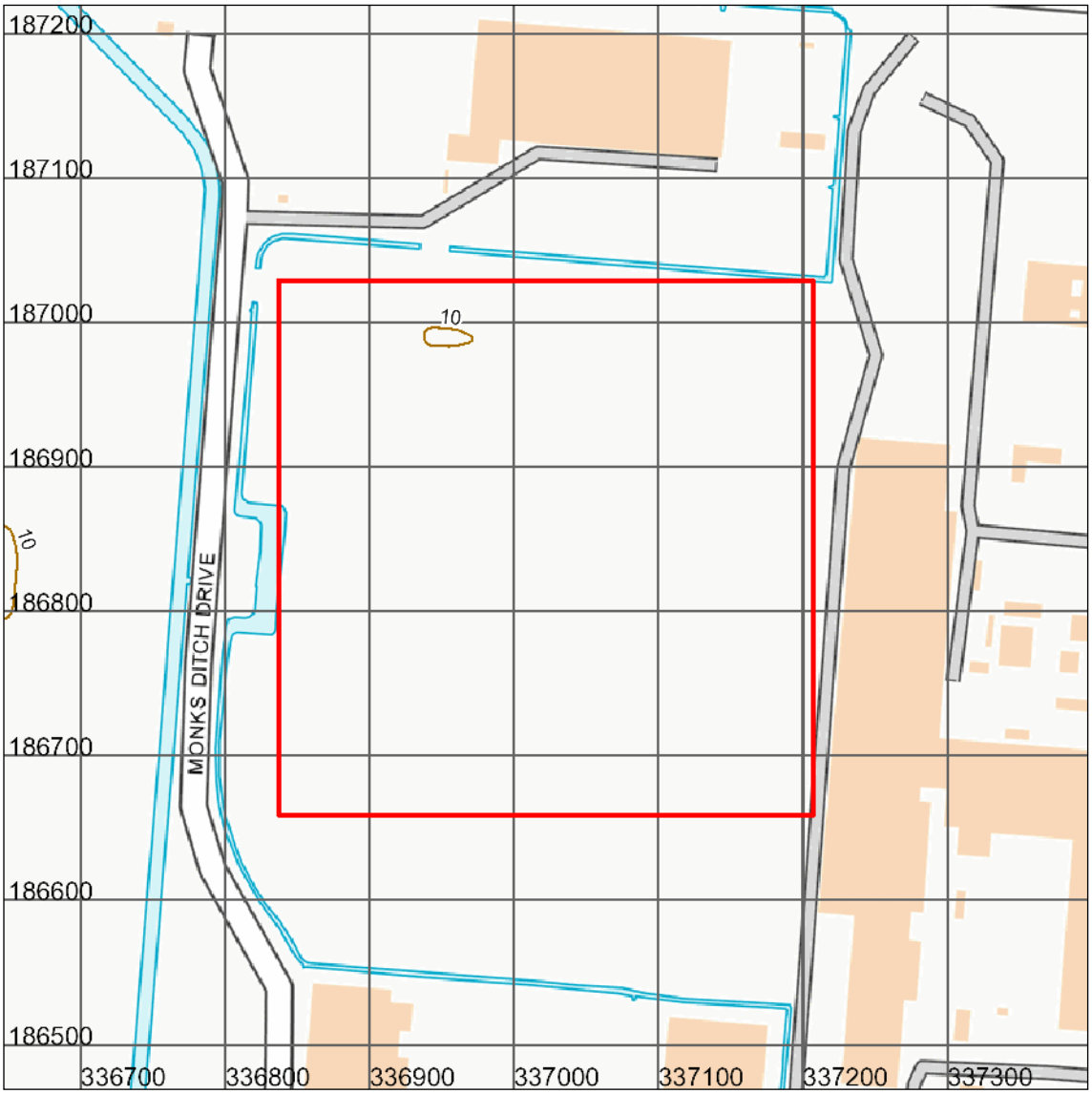
Radon Report

Advisory report on the requirement for radon protective measures in new buildings, conversions and extensions to existing buildings. The report also indicates whether a site is located within a radon Affected Area

Report Id: ***BGS_335266/49187***

Client reference: P17-480_6a,6b&7

Search location



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Search location indicated in red

This report describes a site located at National Grid Reference 337022, 186844. Note that for sites of irregular shape, this point may lie outside the site boundary. Where the client has submitted a site plan the assessment will be based on the area given.

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Radon Report: UK

When extensions are made to existing buildings in high radon areas, or new buildings are constructed in these areas, the Building Regulations for England, Wales, Scotland and Northern Ireland require that protective measures are taken against radon entering the building.

This report provides information on whether radon protective measures are required. Depending on the probability of buildings having high radon levels, the Regulations may require either:

1. No protective measures
2. Basic protective measures
3. Full protective measures

This is an advisory report on the requirement for radon protective measures in new buildings, conversions and extensions. The report also indicates whether a site is located within a radon Affected Area

Requirement for radon protective measures

The determination below follows advice in *BR211 Radon: Guidance on protective measures for new buildings (2023 edition), which also provides guidance on what to do if the* result *indicates that protective measures are required.*

Is the property in an area where radon protective measures are required for new buildings or extensions to existing ones as described in publication BR211 (2023 edition) Radon: Guidance on protective measures for new buildings?

FULL RADON PROTECTIVE MEASURES ARE REQUIRED FOR THE REPORT AREA.

More details of the protective measures required are available in *BR211 Radon: Guidance on protective measures for new buildings (2023 Edition)*. Additional information and guidance is available from the Building Research Establishment website (http://www.bre.co.uk/radon/).

Whether or not the radon level in a building is above or below the radon Action Level can only be established by having the building tested. The UKHSA provides a radon testing service which can be accessed at www.ukradon.org or by telephone (01235 822622).

If you require further information or guidance, you should contact your local authority building control officer or approved inspector.

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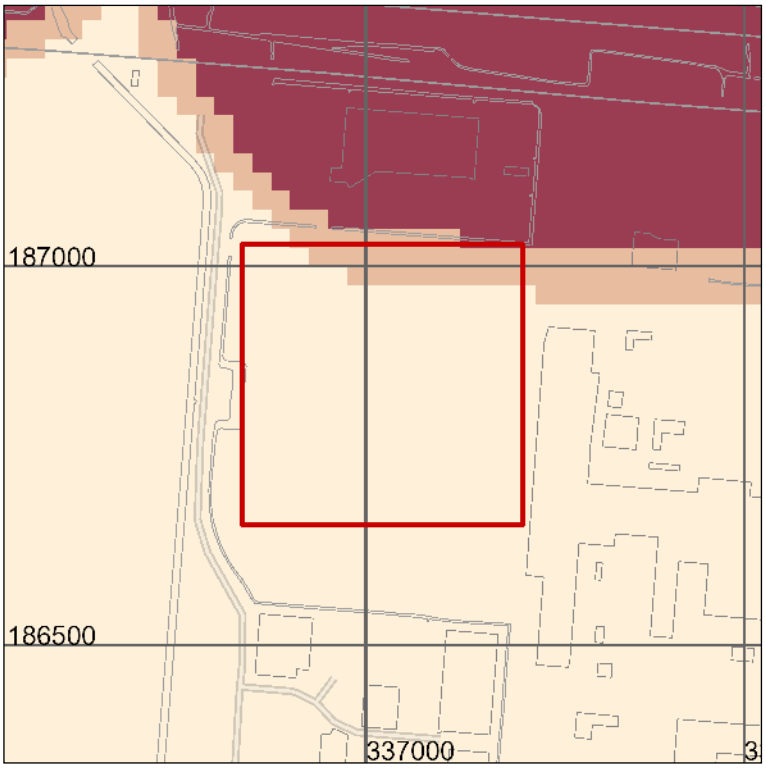
Radon Affected Area



	% Homes estimated to be at or above the action level
	0-1%
	1-3%
	3-5%
	5-10%
	10-30%
	30-100%

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Scale: 1:10 000 (1cm = 100 m)
Search area indicated in red

Is the property in a radon Affected Area as defined by the UK Health Security Agency (UKHSA) and if so what percentage of homes are estimated to be at or above the Action Level? YES

Additional Information

THE PROPERTY IS IN A RADON AFFECTED AREA WHERE 10 TO 30% OF HOMES ARE ESTIMATED TO BE AT OR ABOVE THE ACTION LEVEL.

The UKHSA recommends a radon 'Action Level' of 200 Becquerels per cubic metre of air (Bq m^{-3}) for the annual average of the radon gas concentration in a home. Where 1% or more of homes are estimated to be at or above the Action Level the area should be regarded as a radon Affected Area.

This report informs you whether the property is in a radon Affected Area and the percentage of homes that are estimated to be at or above the radon Action Level at this location. Being in an Affected Area does not necessarily mean there is a high radon level within the property; the only way to determine the radon level is to carry out a radon measurement.

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The UKHSA advises that radon gas should be measured in all properties within radon Affected Areas and that homes with radon levels at or above the Action Level (200 Bq m^{-3}) should be remediated. Householders with levels between the Target Level (100 Bq m^{-3}) and Action Level should seriously consider reducing their radon level, especially if they are at greater risk, such as if they are current or ex smokers. Whether or not a home is in fact above or below the Action Level or Target Level can only be established by having the building tested. The UKHSA provides a validated radon testing service which can be accessed at www.ukradon.org.

The information in this report provides an answer to one of the standard legal enquiries on house purchase in England and Wales, known as Law Society CON29 Enquiries of the Local Authority (2016); 3.14 Radon Gas: Do records indicate that the property is in a “Radon Affected Area” as identified by the UKHSA. The data can also be used to advise house buyers and sellers in Scotland and Northern Ireland.

If you are buying a new build property in a Radon Affected Area, you should ask the builder whether radon protective measures were incorporated in the construction of the property.

If you are buying a currently occupied property in a radon Affected Area, you should ask the present owner whether radon levels have been measured in the property. If they have, ask whether the results were at or above the radon Action Level and if so, whether remedial measures were installed, radon levels were re-tested, and if the results of re-testing confirmed the effectiveness of the measures.

Further information on radon is available from the UKHSA at www.ukradon.org.

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What is radon?

Radon is a naturally occurring radioactive gas, which is produced by the radioactive decay of radium which, in turn, is derived from the radioactive decay of uranium. Uranium is found in small quantities in all soils and rocks, although the amount varies from place to place. Radon released from rocks and soils is quickly diluted in the atmosphere. Concentrations in the open air are normally very low and do not present a hazard. Radon that enters enclosed spaces such as some buildings (particularly basements), caves, mines, and tunnels may reach high concentrations in some circumstances. The construction method and degree of ventilation will influence radon levels in individual buildings. A person's exposure to radon will also vary according to how particular buildings and spaces are used.
Inhalation of the radioactive decay products of radon gas increases the chance of developing lung cancer. If individuals are exposed to high concentrations for significant periods of time, there may be cause for concern. In order to limit the risk to individuals, the Government has adopted an Action Level for radon in homes of 200 becquerels per cubic metre (Bq m^{-3}). The Government advises householders that, where the radon level is at or above the Action Level, measures should be taken to reduce the concentration.

Radon in workplaces

The Ionising Radiation Regulations 2017 require employers to take action when radon is present above a defined level in the workplace. Advice may be obtained from your local Health and Safety Executive Area Office or the Environmental Health Department of your local authority. The BRE publishes a guide (BR293)**: Radon in the workplace.** BRE publications may be obtained from the BRE Bookshop, Tel: 01923 664262, email: bookshop@bre.co.ukwebsite: www.brebookshop.com

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Appendix F: Permeability Testing

Project: P17-480

Phase 6a 6b and 7

6b-Infiltration- 1 (30/06/25)				
Time (m)	Water level (mm)	Difference from start (mm)	Permeability (mm/min)	Permeability (m/s)
1	270	0	-	-
5	265	5	1.00	1.66667E-05
6	263	7	1.17	1.94444E-05
10	260	10	1.00	1.66667E-05
32	255	15	0.47	7.8125E-06
65	252	18	0.28	4.61538E-06
126	248	22	0.17	2.91005E-06
180	247	23	0.13	2.12963E-06
270	246	24	0.09	1.48148E-06
435	244	26	0.06	9.96169E-07

6b-Infiltration-2 (03/07/25) 6b-Infiltration-2				
Time (m)	Water level (mm)	Difference from start (mm)	Permeability (mm/min)	Permeability (m/s)
1	265	0	-	-
5	262	3	0.60	0.00001
6	260	5	0.83	1.38889E-05
10	257	8	0.80	1.33333E-05
30	254	11	0.37	6.11111E-06
66	248	17	0.26	4.29293E-06
134	246	19	0.14	2.36318E-06
176	247	18	0.10	1.70455E-06
220	244	21	0.10	1.59091E-06
450	239	26	0.06	9.62963E-07

6b-Infiltration-3 (09/07/25)				
Time (m)	Water level (mm)	Difference from start (mm)	Permeability (mm/min)	Permeability (m/s)
1	279	0	-	-
5	276	3	0.60	0.00001
6	273	6	1.00	1.66667E-05
10	270	9	0.90	0.000015
30	270	9	0.30	0.000005
60	261	18	0.30	0.000005
120	259	20	0.17	2.77778E-06
180	259	20	0.11	1.85185E-06
320	256	23	0.07	1.19792E-06
480	251	28	0.06	9.72222E-07

6a-Infiltration-1 (07/07/25)				
Time (m)	Water level (mm)	Difference from start (mm)	Permeability (mm/min)	Permeability (m/s)
1	287	0	-	-
5	285	2	0.40	6.66667E-06
6	283	4	0.67	1.11111E-05
10	281	6	0.60	0.00001
30	277	10	0.33	5.55556E-06
60	271	16	0.27	4.44444E-06
120	268	19	0.16	2.63889E-06
180	267	20	0.11	1.85185E-06
300	265	22	0.07	1.22222E-06
450	262	25	0.06	9.25926E-07

6a-Infiltration-2 (08/07/25)				
Time (m)	Water level (mm)	Difference from start (mm)	Permeability (mm/min)	Permeability (m/s)
1	270	0	-	-
5	264	6	1.20	0.00002
6	260	10	1.67	2.77778E-05
10	255	15	1.50	0.000025
30	250	20	0.67	1.11111E-05
60	245	25	0.42	6.94444E-06
120	243	27	0.23	0.00000375
180	242	28	0.16	2.59259E-06
300	241	29	0.10	1.61111E-06
526	239	31	0.06	9.82256E-07

6a-Infiltration-3 (11/07/25)				
Time (m)	Water level (mm)	Difference from start (mm)	Permeability (mm/min)	Permeability (m/s)
1	277	0	-	-
5	272	5	1.00	1.66667E-05
6	269	8	1.33	2.22222E-05
10	266	11	1.10	1.83333E-05
30	262	15	0.50	8.33333E-06
60	258	19	0.32	5.27778E-06
120	254	23	0.19	3.19444E-06
180	251	26	0.14	2.40741E-06
300	249	28	0.09	1.55556E-06
510	247	30	0.06	9.80392E-07

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Phase 6a 6b - Falling Head Tests

6b-WS1 (01/07/2025) - Falling Head					
	Break	Depth (m bgl)	Change	Speed	
Initial		No water			
0	-	Water added	-	-	
1	1	1.356	-	-	
2	1	1.402	0.046	0.000766667	
3	1	1.431	0.075	0.00125	
4	1	1.448	0.092	0.001533333	
5	1	1.465	0.109	0.001816667	
6	1	1.479	0.123	0.00205	
7	1	1.499	0.143	0.002383333	
8	1	1.512	0.156	0.0026	
9	1	1.526	0.17	0.002833333	
10	0	1.539	-	-	Test Period
40	30	1.592	0.053	2.94444E-05	
300	290	1.593	0.054	3.10345E-06	
600	590	1.567	0.028	7.9096E-07	
1200	1190	1.599	0.06	8.40336E-07	

Initial Water (m bgl)	1.539
Duration (min)	1190
Final Water (m bgl)	1.599
Measured Change (m)	0.06
Speed (m/sec)	8.40336E-07

6a-WS3 (02/07/2025) - Falling Head					
	Break	Depth (m bgl)	Change	Speed	
Initial		No Water			
0	-	Water added	-	-	
1	1	0.965	-	-	
2	1	1.03	0.065	0.001083333	
3	1	1.089	0.124	0.002066667	
4	1	1.117	0.152	0.002533333	
5	1	1.124	0.159	0.00265	
6	1	1.14	0.175	0.002916667	
7	1	1.152	0.187	0.003116667	
8	1	1.161	0.196	0.003266667	
9	1	1.169	0.204	0.0034	
10	1	1.177	0.212	0.003533333	
40	0	1.25	-	-	Test Period
100	60	1.262	0.012	3.33333E-06	
160	120	1.28	0.03	4.16667E-06	
220	180	1.322	0.072	6.66667E-06	
280	240	1.325	0.075	5.20833E-06	
340	300	1.338	0.088	4.88889E-06	
1600	1560	1.343	0.093	9.9359E-07	

Initial Water (m bgl)	1.25
Duration (min)	1560
Final Water (m bgl)	1.343
Measured Change (m)	0.093
Speed (m/sec)	9.9359E-07

6a-WS4 (08/07/2025) - Falling Head					
	Break	Depth (m bgl)	Change	Speed	
Initial		2.314			
0	-	Water added	-	-	
1	1	0.475	-	-	
2	1	0.534	0.059	0.000983333	
3	1	0.569	0.035	0.000583333	
4	1	0.597	0.028	0.000466667	
5	1	0.619	0.022	0.000366667	
6	1	0.635	0.016	0.000266667	
7	1	0.648	0.013	0.000216667	
8	1	0.656	0.008	0.000133333	
9	1	0.668	0.012	0.0002	
10	1	0.674	0.006	0.0001	
40	0	0.738	-	-	Test Period
100	60	0.771	0.033	9.16667E-06	
160	120	0.788	0.05	6.94444E-06	
220	180	0.803	0.065	6.01852E-06	
280	240	0.82	0.082	5.69444E-06	
340	300	0.823	0.085	4.72222E-06	
1500	1460	0.825	0.087	9.93151E-07	

Initial Water (m bgl)	0.738
Duration (min)	1460
Final Water (m bgl)	0.825
Measured Change (m)	0.087
Speed (m/sec)	9.93151E-07